A

DEVELOPMENT STUDY

OF

NORTH CAROLINA STATE PORTS

FOR

THE NORTH CAROLINA STATE PORTS AUTHORITY

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TELEPHONE MURRAY HILL 9-6996

January 8, 1957

The Honorable D. S. Coltrane
Assistant Director
The Budget Bureau
State of North Carolina
Raleigh, North Carolina

Dear Mr. Coltrane:

In accordance with your authorization of March 14, 1956, we have undertaken and completed a survey of the North Carolina State Ports in accordance with our proposal of February 25, 1956, as supplemented by our letter of March 16, 1956. On the basis of this survey, we have established a recommended six-year program for the further development of North Carolina's deep-water port facilities.

The recommended six-year program, together with related findings and a discussion of the major factors considered in the survey, have been included in a report entitled, "A Development Study of the North Carolina State Ports", which is transmitted herewith.

We have enjoyed our work on this Study, both because of the challenging and stimulating problems which are presented by your ports, and because of the friendly and helpful cooperation which we have received from the staff of the North Carolina Ports Authority, from its Executive Director, and from representatives of other State Agencies on whom we have called.

We feel that the further development of the State Ports, and the recapture of that major portion of the State's water-borne commerce which is now using other ports, should be key elements in the State's program for the strengthening and broadening of the North Carolina economy. We hope that our work as reflected in this report may be helpful in achieving that objective.

Yours very truly,

James C. Buckley

James C. Buckley
President

JCB:sp

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January 8, 1957

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I. Findings and Recommended Six Year Development Program

On the basis of the investigations described in Chapter II, which are discussed in detail in Chapters III-XI, inclusive, it is recommended that the Authority adopt a further program of port development for the six years beginning July 1, 1957, which will include the following major elements:

1. The installation at Morehead City of the following additional facilities, as shown in Exhibit I which appears on Page 12.
    a. A warehouse with an area of 100,000 square feet, together with related rail and highway connections.
2. The installation at Wilmington of the following additional facilities, as shown in Exhibit 2 which appears on Page 13.
    a. The extension of the existing bulkhead southward approximately 1,226 feet, and thence southeastward approximately 710 feet, to provide one new general cargo berth and two new open berths for the handling of scrap metal and other materials and products not requiring the use of a transit shed.
    b. The construction of a transit shed on the new general cargo pier, a portion of which would be reserved initially for storage.
    c. The conversion of the fabricating shop at the old Maritime Commission Shipyard to a storage warehouse, and its subsequent extension for the purpose both to the north and to the south.
    d. The construction of a new warehouse in the area of the old Maritime Commission Railroad Yard.
    e. Related extensions of rail track, crane track, roadways and utilities.

This recommended development program can reasonably be broken down into three stages, one for each of the three biennia here under consideration. A preliminary estimate of the total cost of this program by biennia, in terms of November, 1956, dollars, including allowances for architects' and engineers' fees and a 15% allow-

ance for contingencies is as follows:

	Estimated Cost			
Location and Improvement	Total	1958-59	1960-61	1962-63
Morehead City				
Storage Space	$ 1,150,000	$1,150,000	$ ..	$ ..
Rail extension	21,505	21,505	..	..
Roads & other paving	44,620	44,620	..	..
Site preparation & util.	121,613	121,613	..	..
Sub-Total	$ 1,337,738	$1,337,738	$ ..	$ ..
Wilmington				
Bulkhead and wharf	$ 3,473,000	$3,473,000	$ ..	$ ..
Transit shed	841,800	841,800	..	..
Storage space	6,578,000	851,000	3,001,500	2,725,500
Rail extension	205,820	157,550	20,240	27,830
Roads & other paving	232,645	124,300	41,975	66,470
Site preparation & util.	1,133,107	544,755	306,372	281,980
Sub-Total	$12,646,172	$5,992,305	$3,370,087	$3,101,780
Grand Total	$13,801,910	$7,330,043	$3,370,087	$3,101,780

No improvement is recommended for the Port of Southport in view of the finding that there is no local market for deep-water service in Southport or the adjacent area, and the further finding that the total volume of deep-water trade available to North Carolina ports would normally be handled in only one port complex rather than in the two already established.

No additional land was found to be required for the needed development at Morehead City. At Wilmington, there is need for substantial additional land. This need can best be filled by acquiring from the Federal Government the old Maritime Commission Shipyard which adjoins the Authority's existing improvements on the south. In connection with negotiations for the acquisition of this land, it is recommended that the Authority seek a conveyance of the land which it presently holds under lease, as well as the balance of the old Maritime Commission Ship-

yard property, but only if such conveyance be free of restrictions which would hamper the Authority in the further development and operation of its marine terminal facilities and related activities. Such restrictions are considered to include:

1. Those which give the Federal Government a right to recapture the property other than through the normal procedures established for the condemnation of land and improvements by the Federal Government.

2. Those which establish any limit on the award which the Authority would receive in the event of such condemnation, or restrict the elements which the Court might consider in determining the award.

3. Those which impose any restrictions on use of the land or impose any controls which would make the further use of the land in any way subject to the control of the Federal Government.

4. Those which give the Federal Government the right to leave any removable property on the site beyond a fixed and limited period.

The imposition of such restrictions might be justified if the Federal Government were being asked to donate this land to the Authority; but with the Authority in possession of 323 acres of desirable land which has been purchased for the specific purpose of an exchange with the Federal Government for the old Shipyard property, it is reasonable to expect the consumation of a trade free of burdensome restrictions on either party.

In connection with the development program recommended for Morehead City, it was found that there is a prospective deficiency in available storage for railroad cars to back up port operations. Consequently, it is recommended that the Authority initiate discussions with the Atlantic and East Carolina Railway looking toward the installation by the railroad of additional car storage capacity.

The development program here recommended is based on a forecast of average annual deep-water tonnage available to the North Carolina ports in the 1960-65

period. This forecast amounts in total to 4,900,000 tons of deep-water cargo annually. It compares with actual deep-water tonnage at North Carolina ports in selected post-war years as follows:

Year	Deep-Water Tonnage at North Carolina Ports (thous.)		
	Foreign	Coastwise	Total
1947	109.8	2,009.8	2,119.6
1949	159.7	2,212.9	2,372.6
1951	363.3	3,227.0	3,590.3
1953	363.7	2,901.8	3,265.5
1955	700.3	3,001.2	3,701.5
1960-65 (est.)	1,400.0	3,500.0	4,900.0

The anticipated increases in deep-water trade through the North Carolina ports will come primarily from the recapture by those ports of traffic to and from their inland trade territory by which they are not bypassed. The future of the North Carolina ports is not, therefore, dependent upon any substantial growth in total deep-water trade, but rather on the provision of facilities to accommodate the trade which rightfully should utilize these ports as a matter of economic good judgment. Since the principal trade territory for the North Carolina ports lies within the State of North Carolina itself, this fact emphasizes the benefit to the economy of the State as well as to the port cities of a development program which will recapture this North Carolina deep-water commerce now moving through ports in adjoining states to the north and to the south.

North Carolina is outstanding both among the South Atlantic States and among the entire southeastern group of states in agriculture, industry, and domestic trade. It is a strong generator of products and a strong user of materials and products moving in water-borne commerce, yet its ports handle less tonnage in foreign trade than the Atlantic Coastal ports of Virginia, South Carolina, Georgia or Florida; and its deep-water tonnage in relation to popula-

tion, in relation to value added by manufacture, and in relation to agricultural products sold, is lower by far than that of any of the South Atlantic Coastal States or Virginia.

In spite of the vacuum at North Carolina ports which obviously must attract much greater patronage given adequate facilities and strong promotional effort, the tonnage forecasted for these ports in the 1960-65 period is only about half that which would normally be expected based upon the indicated traffic generating power of the State.

The deep-water tonnage conservatively estimated to be available to the North Carolina Ports in the 1960-65 period has been divided between Morehead City and Wilmington in accordance with the finding that provision of deep-water terminal facilities would not be feasible at Southport at this time. The distribution of the tonnage prospectively available as between Morehead City and Wilmington was made on the basis of an exhaustive analysis of the resources of the inland territory in which each port either enjoys an advantage over any other port or is equal to any other port in terms of inland transportation costs. This analysis disclosed that:

1. For most cargo, the normal division of trade between the two ports would be 5% or 6% to Morehead City and 94% or 95% to Wilmington.

2. For tobacco, the normal division of trade between the two ports would be about 26% to Morehead City and about 74% to Wilmington.

On the basis of these factors, the prospective deep-water tonnage in the 1960-65 period was divided between the two ports as follows:

Inter-Port Distribution of Forecasted 1960-65 Annual Deep-Water Tonnage

Type of Cargo	Forecasted 1960-65 Annual Tonnage (thous.) Morehead City	Wilmington	Total
General Cargo			
Tobacco	25	75	100
Woodpulp	..	25	25
Other	25	300	325
Sub-Total	50	400	450
Bulk Cargo			
Coal tar products	..	10	10
Fertilizer materials	..	175	175
Grain	25	..	25
Gypsum and sulphur	..	15	15
Industrial chemicals	20	10	30
Molasses	..	85	85
Petroleum products	375	3,450	3,825
Scrap iron	..	200	200
Other	25	60	85
Sub-Total	445	4,005	4,450
Grand Total	495	4,405	4,900

It should be noted that the above forecasts of available deep-water trade cover the total of such trade expected to be available to all facilities in each port. To determine the deficiencies in the existing port installations, it was necessary to establish by field investigation the capacity of existing facilities for the accommodation of various types of tonnage. The capacity of each of the ports on the basis of existing facilities, in relation to total trade other than local at each port in 1955, is as follows:

Tonnage Capacity and Estimated 1960-65 Average Demand (thous.)

	Morehead City		Wilmington	
Type of Cargo	Estimated Capacity	1960-65 Est. Volume	Estimated Capacity	1960-65 Est. Volume
General	182	50	271	400
Bulk				
Grain	52	25	..	..
Scrap Metal	..	..	158	200
Other bulk dry	..	25	610	250
Petroleum prods.	1,710	375	5,580	3,450
Other bulk liquid	120	20	261	105
Sub-Total	1,882	445	6,609	4,005
Grand Total	2,264	495	6,880	4,405

Analysis of the indicated relationships between capacity and demand at each port established the following deficiencies in prospect at the Authority's installations at Morehead City and Wilmington:

		Prospective Deficiencies	
Item	Unit	Morehead City	Wilmington
Deep-Water berths	No.	0	2 or 3
Bulkhead and wharf	l.f.	0	1,200-1,800
Transit Sheds	sq. ft.	0	50,000
Warehouses	sq. ft.	100,000	700,000

Evaluation of the deficiencies at the respective sites resulted in the development programs recommended above.

With the growth of deep-water traffic, there will be substantial increases in the Authority's revenue, and less than proportional increases in its operation and maintenance expense, due to the better utilization of labor and the larger base over which to spread overhead. On the assumption that 25% of the volume increase anticipated between the year ended June 30, 1956 and the year ending June 30, 1963 will be achieved by the second year of the 1958-59 biennium; that 50% of this increase will be achieved by the second year of the 1960-

61 biennium; and that the entire increase will be achieved by the second year of the 1962-63 biennium, anticipated operating revenues and operation and maintenance expenses in each of those years, compared to actual in the year ended June 30, 1956, are as follows:

Year Ending June 30	Revenues	Operation & Maintenance Expense	Operating Margin Before Depreciation
1956 (actual)	$ 533,877	$ 438,988	$ 94,889
1959 (est.)	882,275	620,150	262,125
1961 (est.)	1,112,550	733,100	379,450
1963 (est.)	1,566,100	956,500	609,600

These findings as to operating margin before depreciation are after deducting total operation and maintenance expenses with no credit for funds customarily appropriated by the State Legislature for administration and port promotion. The general interests of the State would certainly appear to justify a continuing annual appropriation from general revenues to administer the State Port Facilities and to promote and protect its water-borne commerce. On the assumption that such appropriations should reasonably average $150,000 annually over the next three biennia, the estimated operating margins as given above for the years ending June 30, 1959, 1961 and 1963, would each be increased by $150,000. The average annual operating margin based on the three years would then be $567,000.

If the $13,800,000 development program recommended above were financed with 20-year general obligation bonds secured by the full faith and credit of the State of North Carolina, and these bonds were sold at an average effective interest cost of 4%, the average annual debt service would be approximately $970,000. The indicated average annual operating margin to be available during the first six years of the recommended development would fall short of this average annual debt service charge. It is significant, however, that the Authority should be able to embark on a $13,800,000 development program of benefit to

the entire State, and yet require tax revenues for not more than 40% of the debt service by the sixth year after the initiation of the program.

It is not considered that the financing of a portion of the needed development program with revenue bonds is feasible. This is because:

1. The provisions of Section 13 of the State Ports Bond Act of 1949 require that the net earnings of the Authority, after reserving an amount deemed necessary for operating capital and for making enlargements, extensions and other improvements, be paid to the State Treasurer for the payment of the principal of and interest on bonds issued under that Act.

2. There are burdensome and restrictive provisions in the lease from the Federal Government under which the Authority holds the waterfront property which it has improved at Wilmington.

It may well be found desirable to finance a part of the development here recommended on a revenue basis, and it certainly will be found desirable in the future to enter the revenue bond market for the financing of port improvements. Consequently, it is recommended that consideration be given to an amendment to the State Ports Bond Act of 1949 which will make the net revenues of the Authority available for the payment of principal and interest on such revenue bonds as the Authority may issue, rather than being reserved as additional security for the general obligation bonds which are secured by the full faith and credit of the State of North Carolina. It has, of course, been recommended above that the Authority use every possible effort to remove the restrictive provisions in its lease with the Federal Government by securing a conveyance of title to this property free of such restrictive covenants.

The achievement of the deep-water tonnage forecast for the 1960-65 period, and of the related revenues from port operation, will require continuing effort in the field of port commerce promotion and protection. It is found that the Authority has a well-balanced program in these fields which are so essential to the welfare of the economy of the State as a whole, as well as to the prosperity of its ports. To strengthen further these activities, it is

recommended that the solicitation staff be increased by the addition of:

1. A full-time solicitor stationed in a tobacco center such as Wilson.
2. A full-time solicitor stationed in Charlotte to cover the southern Piedmont.
3. A full-time solicitor stationed in Winston-Salem to cover the northern Piedmont.
4. A full-time solicitor stationed in Asheville to cover the western portion of the State as well as adjacent areas in Tennessee, Kentucky and West Virginia.

In addition to the expansion of the solicitation force, it is found that the program of port commerce promotion might well consider:

1. A program of field clinics on port matters which might be held monthly at different key cities throughout the state.
2. An annual conference in Wilmington on port problems to which would be invited outstanding business leaders from the entire state to confer on the problems of developing and handling the water-borne commerce of the State.

In this connection attention is called to the finding that no definitive information is available with respect to the water-borne commerce actually generated within the State of North Carolina. Such information would be invaluable in developing the use of the State's ports, as well as in many other connections. Consequently, it is recommended that the Authority consider the desirability of instituting an investigation to provide definitive information on this problem.

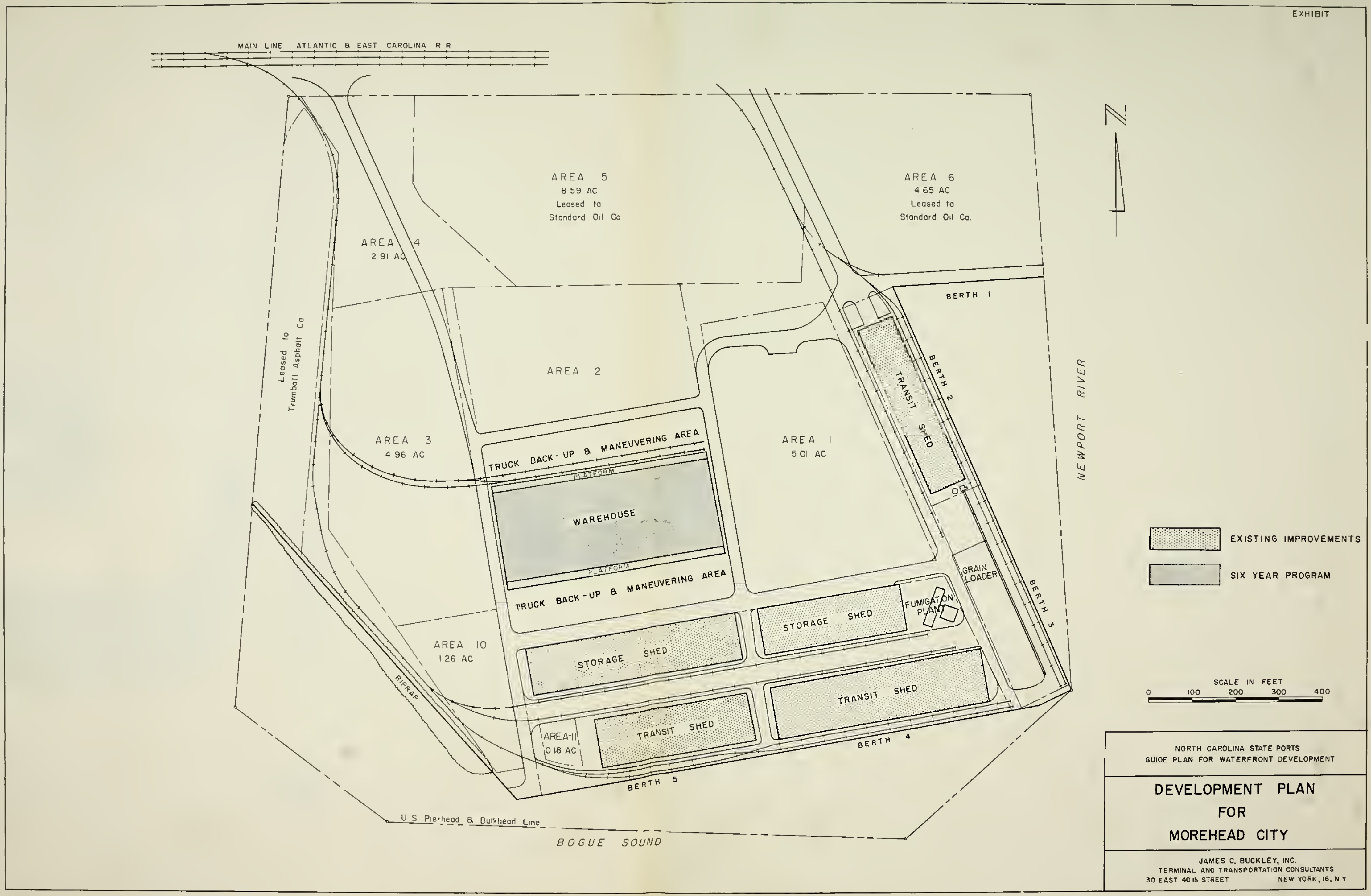
In the field of port commerce protection, the Authority has made very substantial progress on rationalizing the inland rate structures applicable at Wilmington and Morehead City. This is a continuing effort which must be maintained in order to protect the State Ports from unfair and unjust competition with respect to applicable inland transportation rates.

Notwithstanding the availability of very substantial deep-water tonnage

to the North Carolina ports, the recapture of that tonnage from competing ports by whom it has been taken over will be a long and arduous struggle. This is because it is difficult to change the established patterns of trade, even though they may not be the most economical or efficient patterns. In the case of the North Carolina ports, however, the established patterns of trade which by-pass the ports are less economical and less efficient for most North Carolina shippers and receivers of deep-water cargo than service through the North Carolina ports. Consequently, the State and the Authority will be bringing substantial benefit to the economy of the State as well as to its ports by a strong and continuing developmental effort which will provide the facilities required to accommodate the available trade economically and efficiently.

In this connection, it is felt, on the basis of the investigation made in the course of this study, that the tonnage actually available to the North Carolina Ports is double or more that which has here been forecast; and that a strong and continuing effort on the part of the Authority should not only achieve the objectives here established, but should go well beyond these objectives either within the period here under consideration or not long thereafter. And every ton of North Carolina deep-water commerce which is returned to a North Carolina port not only brings increased strength and prosperity to that port, but also brings the advantages of more efficient and more economical transportation to the North Carolina industries concerned. The Authority's program of Port Development meets, therefore, both the objective of improving the business of its facilities, and the broader objective of bringing greater strength and more benefits to the economy of the State as a whole.

EXHIBIT

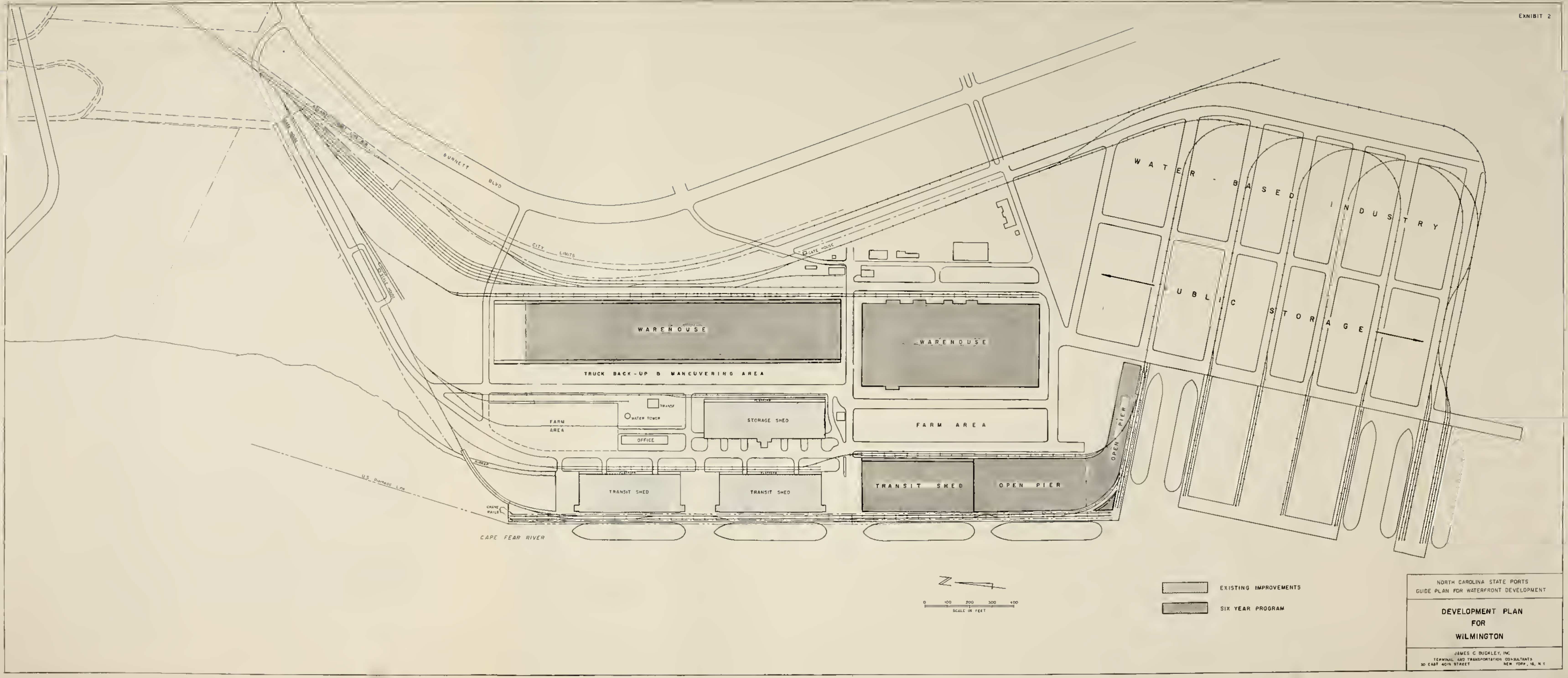


NORTH CAROLINA STATE PORTS
GUIDE PLAN FOR WATERFRONT DEVELOPMENT

DEVELOPMENT PLAN FOR MOREHEAD CITY

JAMES C. BUCKLEY, INC.
TERMINAL AND TRANSPORTATION CONSULTANTS
30 EAST 40th STREET NEW YORK, 16, N Y

EXHIBIT 2



NORTH CAROLINA STATE PORTS
GUIDE PLAN FOR WATERFRONT DEVELOPMENT

DEVELOPMENT PLAN
FOR
WILMINGTON

JAMES C. BUCKLEY, INC.
TERMINAL AND TRANSPORTATION CONSULTANTS
30 EAST 40th STREET NEW YORK, 16, N.Y.

II. Objectives and Scope of the Study

The basic objectives of this engagement have been to frame soundly-based recommendations for the consideration of the State of North Carolina as to a six-year program for the operation and further development of the State Ports Authority marine terminal facilities at Morehead City and Wilmington, and as to the need and justification for the installation of marine terminal facilities at Southport by the State Ports Authority.

To achieve these objectives, consideration has been given to the changes since 1947 in the data presented to the State in a "Report on North Carolina State Ports", which was submitted December 23, 1947; as well as to pertinent factors which were not included in the 1947 report, either because they have developed since that time or because they were outside the scope of that study. Consideration has also been given to other factors considered pertinent to the establishment of a soundly-based program for the State's existing ports, and for a decision as to the need for State action in connection with port facilities at Southport. Among others, the underlying investigations have included careful consideration of the following factors:

1. The position of the State of North Carolina as an economic unit in relation to its region and to the nation as a whole.
2. The economic profile of the State of North Carolina in relation to the production of agricultural and manufactured products which might economically move from the State by water, and in relation to the consumption of raw materials and intermediate products which might reasonably move into the State by water.
3. The steamship service offered at Morehead City and Wilmington in relation to that offered at other South Atlantic ports.
4. The volume and types of cargo which have moved through the North Carolina port cities of Morehead City and Wilmington in relation to those which have moved through other South Atlantic ports.

5. The inland trade territory in which rates applicable at the North Carolina ports are equal to or better than rates applicable at competing ports.

6. The deep-water traffic prospectively available to the North Carolina ports.

7. The capacity, suitability and utilization of the State's existing terminals for deep-water cargo, and their ability to handle increased traffic.

8. The indicated need for new or additional marine terminal capacity for deep-water cargo at Morehead City, Southport and Wilmington.

9. The land required for new or additional marine terminal capacity at each port city in relation to the land presently held by the State for such installations, to determine the additional land which might be required, if any.

10. The need for acquisition and for reservation of land by the State for use by waterfront and water-based industry.

11. The preparation of rough preliminary functional layouts of needed marine terminal facilities.

12. The preparation of preliminary cost estimates for needed marine terminal facilities.

13. The prospective levels of Ports Authority revenue and operation and maintenance expense, and resulting conclusions as to the economic feasibility of the expansion and improvements recommended.

14. The methods of financing the further development of State port facilities, including consideration of the effect of:

    a. The structure and level of rates for the use of such facilities, ancillary services and related land.

    b. Agreements in effect between the State and the Federal Government with respect to the operation and continued use of port facilities.

15. The administration of port development at the State level with particular reference to the promotion and protection of the State's water-borne commerce.

The various investigations which were made in connection with the study,

and their implications in relation to the basic objectives of the study, are discussed in the succeeding chapters of this report. Pertinent data bearing on such discussions are submitted as exhibits at the end of each such chapter. The Findings considered indicated by these investigations, together with the Guide Plan for the Further Development of the State Ports which is recommended for adoption on the basis of these Findings, have been presented in Chapter 1.

III. The Problem and Its Setting

Under authorization from the 1949 Legislature, the State of North Carolina made a basic investment of $7,500,000 in public marine terminal facilities suitable for deep-water commerce in the Ports of Morehead City and Wilmington. After approximately 5 years of use of the improved facilities, the questions which naturally require consideration are whether the original investment was justified, whether additional investment is required, and whether additional investment, if required, would be justified. Definitive answers to these questions depend both on judgment and on the detailed discussions in succeeding chapters of this report. It is appropriate here, however, to consider summary data which bear on these basic issues.

The first point which merits consideration is the progress which has been made in attracting deep-water trade to the State's ports since the authorization of the basic investment of $7,500,000 in 1949. The following data show the total deep-water tonnage handled at both North Carolina ports together for the years 1946-1955, inclusive:

Deep-Water Commerce at North Carolina Ports

Year	Tonnage Handled (thous.) Foreign	Coastwise	Total
1946	127.1	1,745.2	1,872.3
1947	109.9	2,009.7	2,119.6
1948	208.6	2,152.2	2,360.8
1949	159.7	2,213.4	2,373.1
1950	331.3	2,918.1	3,249.4
1951	363.4	3,227.1	3,590.5
1952	382.8	2,805.8	3,188.6
1953	363.7	2,901.8	3,265.5
1954	506.5	2,694.3	3,200.8
1955	700.2	3,001.1	3,701.3

It will be noted from these data that there was a marked upturn in the deep-water tonnage at the State's ports in the year following the authorization of the basic investment in new and improved facilities. It can reasonably be concluded that even though no material progress has been made in that short period in the installation of new facilities, the very fact that a public agency was authorized and empowered to carry through such a program encouraged an immediate increase in the use of the State's deep-water ports.

While the tonnage has varied both up and down since 1950, it is noteworthy that the foreign commerce handled through the State's deep-water ports in 1955 was by far the highest in the past ten years, being more than four times greater than in 1949; and that the coastwise commerce handled at the State's deep-water ports in 1955 was the second highest in the past ten years, and more than one third larger than in 1949. In total volume of deep-water commerce, the State's ports handled in 1955 the largest volume of any of the last ten years, with a total a little over 3% above the previous high which was reached in 1951.

Of particular interest in connection with the above data is the fact that in 1955 import tonnage at Wilmington was higher by a considerable margin than in any other of the past ten years; and export tonnage was more than 2-1/2 times the volume in the next highest of the past ten years, which was 1954. There is a clear indication of a strong growth trend in the State's deep-water commerce handled at its own port cities, and also an indication within the past two years of a far better balance between import and export trade at Wilmington than had been apparent theretofore.

It is equally clear, however, that the State of North Carolina has only made a beginning in attracting the deep-water tonnage which should reasonably

be handled at its own port cities. This is apparent from a comparison of the deep-water tonnage at North Carolina ports in relation to economic indicators for the State of North Carolina with the deep-water tonnage at other South Atlantic ports in relation to economic indicators for their states. It is also apparent from a comparison of deep-water tonnage developed at North Carolina ports with the deep-water tonnage developed by the port cities of other South Atlantic States.

With respect to the relationship between deep-water tonnage (foreign and coastwise trade) at the Atlantic ports of each South Atlantic State and selected economic indicators for each such state, the following data are revealing with respect to the position and prospects of North Carolina:

Ports of Atlantic Coast	1954 Deep-Water Tonnage Per Thousand 1950 Population	Per $ million of 1953 Value Added by Manufacture	Per $ million value of Agricultural Products Sold-1950
Florida	2.9	12.0	24.5
Georgia	1.0	2.3	9.3
North Carolina	0.8	1.4	5.8
South Carolina	1.5	3.0	15.0
Virginia	9.2	18.6	98.1
Average-5 States	3.1	6.8	27.1

Noteworthy from the above compilation is the fact that North Carolina in 1954 handled less deep-water tonnage at its own ports in relation to population, in relation to value added by manufacture, and in relation to the value of agricultural products sold, than any other South Atlantic State or Virginia. Yet North Carolina is outstanding both among the South Atlantic States and among the entire southeastern group of states in agriculture, industry, and domestic trade, - usually ranking first among all the southeastern states in the value of farm products sold and the value added by manufacture; second in retail sales; and third in wholesale sales and service receipts.

With respect to the total deep-water tonnage at North Carolina ports compared to other South Atlantic ports, the Hampton Roads ports in Virginia, Charleston in South Carolina, Savannah in Georgia, and the East Coast ports of Florida, all generate more deep-water tonnage than the North Carolina ports even though each has a smaller economic base in their own state to support such trade. The total deep-water tonnage handled at the ports of each South Atlantic State in 1954 was as follows:

Deep-Water Tonnage at Ports of Each South Atlantic State-1954

Atlantic Coast Ports of	Deep-Water Tonnage (thous.) Foreign	Coastwise	Total
Florida	2,303	5,980	8,283
Georgia	1,881	1,621	3,502
North Carolina	507	2,694	3,201
South Carolina	1,457	1,753	3,210
Virginia	18,123	12,258	30,381
Total-5 States	24,271	24,306	48,577

While the trend in deep-water tonnage at the North Carolina port cities is extremely encouraging, the above data bring out forcibly the fact that North Carolina is just beginning to bring back to its own ports some of the substantial volume of its trade which is obviously moving through competing ports in Virginia, South Carolina, and possibly even in Georgia or Florida. The impact of World War II, combined with the lack of modern pier facilities at Wilmington until long after the close of the war, made the use of a North Carolina port impossible or undesirable at a period when new post-war port patterns were being developed. Charleston, Norfolk and Savannah were all in a position to serve the trade, and the record clearly shows that they were successful in securing it. The road back for the North Carolina ports is not an easy one, and it is most encouraging that as much progress has been made

as is indicated by the 1954 and 1955 tonnages.

That an effort to continue and increase the upward trend in deep-water commerce at North Carolina ports would be well-justified is clearly indicated by intensive studies of the economic benefits from water-borne commerce which have been made by the Virginia State Ports Authority and by the Port of New York Authority. The following statements are found in a study dated June, 1954, on "The Impact of Virginia Ports on the Economy of Virginia", which was prepared for the Virginia State Ports Authority by the University of Virginia:

> "1. In 1953, 50,000 jobs and $160,000,000 of payrolls in Virginia and neighboring states depended on activities connected with the Virginia ports.
>
> "11. Port and related activities in the Hampton Roads area generate the same amount of employment, income, and taxes as a city of 96,000 people. The secondary effect on areas outside the port provides employment for some 40,000 people in other parts of Virginia and some 25,000 people in other states."

In a study prepared by the Port of New York Authority and issued in May, 1956, the Foreword by the Chairman of the Port of New York Authority includes the following statement:

> "***The conclusions of the report indicate that the Port's handling of many millions of tons of water-borne commerce in an average year produces:
>
> "Port jobs that provide livelihood for at least 430,000 people.
>
> "Support for one out of every four people who live in the Port District.
>
> "More than a fourth of the total wages earned in the Port District."

The problem before the State in appraising its port facilities and the need for their further development involves, therefore, a judgment as to the volume of deep-water commerce available to each of its present and prospective

port cities; a judgment as to the capacity of the existing port facilities; a judgment as to the new or additional facilities required to serve the available traffic; and finally, a program for physical development to keep abreast of indicated demand at each port. Only by making and implementing such judgments can the State expect to return to its own ports an increasing portion of the deep-water commerce which it generates, and thus benefit from the employment directly attributable to the handling of such cargoes, from the benefits which accrue to related industries, and from the attraction to its port cities of water-based and water-related industry. As a background for these judgments, brief consideration will be given here to each of the port cities and their existing marine terminals.

Port of Morehead City

The Port of Morehead City is located on the north side of Bogue Sound and west of the mouth of the Newport River. Entrance from the Atlantic Ocean is via Beaufort Inlet through an improved channel between Bogue Banks and Shackleford Banks. The channel has a width of 400 feet across the ocean bar to a point in line with the banks and continues at a width of 300 feet, after making a 60° turn to the left at a widened bend to a Y-shaped turning basin. A project depth of 30 feet is authorized for the channels and turning basin. The turning basin has a minimum width of 600 feet in each arm, and a portion of the north arm has been dredged to a greater width and at an angle to parallel the face of the marine cargo terminal.

A 12-foot channel 100 feet wide, forming part of the Intracoastal Waterway, extends in a westerly direction along the commercial waterfront of Morehead City from the western arm of the Y-shaped turning basin to Sixth Street, thence at the same depth and from 200 to 400 feet wide to Tenth Street, and

continues at a depth of 6 feet and a width of 75 feet to deep-water in Bogue Sound.

The Port of Morehead City is shown in Exhibit 3 which appears on Page 29.

The Port of Morehead City became a factor in the foreign and domestic commerce of the State of North Carolina in 1936 when the 30-foot Federal channel was completed and public marine terminal facilities were provided by the municipality. Prior to that time, large fishing fleets and shallow draft commercial boats had operated out of the port for many years, but there was no deep-water commerce in the sense of foreign and coastwise trade.

In spite of the availability of general cargo facilities since 1936, the volume of general cargo traffic has been extremely low, with the growth concentrated almost entirely in bulk liquid cargoes. In the war period of 1943-45, the commerce of the port all but dried up with the total tonnage dropping to 7,671 tons in 1945. Deep-water tonnage has increased somewhat in the postwar decade, the data being as follows:

Deep-Water Tonnage at Morehead City

	Tonnage Handled (thous.)		
Year	Foreign	Coastwise	Total
1946	21.1	38.9	60.0
1947	24.5	93.5	118.0
1948	51.9	150.0	201.9
1949	26.8	144.5	171.3
1950	123.2	176.4	299.6
1951	130.4	167.8	298.2
1952	161.7	205.1	366.8
1953	144.9	290.9	435.8
1954	149.7	179.1	328.8
1955	135.3	182.0	317.3

Of the approximately 317,000 tons in 1955, however, all but about 7,800 tons was bulk liquid cargo of one type or another.

The Port of Morehead City has a total of twenty-four piers, wharves and dock facilities, including the additions and improvements made by the State Ports Authority in 1950 to the terminal facilities originally built by Morehead City. A survey of all of the pier locations in the port disclosed the following facts:

1. 20 of the 24 piers are dedicated to the mooring or servicing of small craft operating in the fishing trade out of the port. Several of these piers have facilities for the handling of fresh fish directly from vessels of the fishing fleet. Seven of these piers are located on Calico Creek at the northeast end of the city, and 13 are located on Bogue Sound along the southern side of the city. None is on the 30-foot channel leading to Morehead City's ocean terminals, and none has berthing space in excess of 200 feet.

2. Only four piers are located on the 30-foot channel and have sufficient size to handle ocean-going vessels used in world trade today. These piers are also directly on the Intracoastal Waterway. Of these four,

    a. One is a bulk liquid terminal used exclusively for the handling of petroleum products.

    b. Three are berths at the public marine terminal of the State Ports Authority. These are used for the handling both of bulk liquid and also of general cargo.

The existing facilities at the Ports Authority marine terminal at Morehead City are shown in Exhibit 4 which appears on Page 30.

Port of Wilmington

The Port of Wilmington is located about 30 miles from the mouth of the Cape Fear River at its junction with the Northeast (Cape Fear) River. The mouth of the Cape Fear River is about 5 miles west of Cape Fear, between Smith Island on the east and Oak Island on the west. A channel for deep-draft vessels has been dredged from the outer end of the ocean bar at the mouth of the river to Wilmington.

Most of the water-front terminal development at the Port of Wilmington is on the eastern shore of the Cape Fear and the Northeast (Cape Fear) Rivers, although there are several piers and wharves at chemical and fertilizer plants on the west shore of the latter river near the upper limit of the port, and others at similar plants at Navassa, an unincorporated settlement on the Cape Fear River 4 miles above Wilmington. A drawing of the Port is submitted as Exhibit 5 which appears on Page 31.

The Port of Wilmington has served as the principal port of North Carolina since early colonial days. During its early history, it handled the greatest portion of the nation's naval stores. In the 19th and early 20th centuries, it was a great export point for cotton raised in the South Atlantic states.

During the period between World Wars I & II, the water-borne commerce of the Port of Wilmington built up to a peak tonnage in 1941 of 2,442,340 short tons of commercial cargo. This volume dropped precipitately to less than 1,000,000 tons annually in 1942-1944, inclusive, again exceeded 1,000,000 tons in 1945, and went above 2,000,000 tons in 1946. The above data relate to total tonnage including foreign trade, coastwise receipts and shipments, and traffic moving within the intracoastal waterway as well as within the limits of the river and the port. From the standpoint of deep-water traffic in foreign and coastwise trades, the volume during each of the ten years ended December 31, 1955, was as follows:

Deep-Water Commerce at Wilmington

Year	Tonnage Handled (thous.) Foreign	Coastwise	Total
1946	106.0	1,706.3	1,812.3
1947	85.3	1,916.3	2,001.6
1948	156.7	2,002.3	2,159.0
1949	132.9	2,068.9	2,201.8
1950	208.1	2,741.7	2,949.8
1951	232.9	3,059.2	3,292.1
1952	221.1	2,600.7	2,821.8
1953	218.8	2,610.9	2,829.7
1954	356.8	2,515.3	2,872.1
1955	565.0	2,819.2	3,384.2

It will be noted from the above tabulation that the volume of foreign trade through the Port of Wilmington has increased very materially during the past two years, and that in 1955 the Port had the second highest volume of coastwise trade during the past ten years. In terms of total tonnage in foreign and coastwise trade, the year 1955 had the largest volume of any of the past ten years, and reflected a steady increase since 1952.

To serve its growing trade, the only new marine terminal facilities constructed for general public use in the Port of Wilmington during the past generation were those constructed by the State Ports Authority and brought into use in 1952. Apart from these modern piers, the facilities of the port are generally obsolete and uneconomical in use except for the private facilities for the handling of bulk liquid and bulk dry cargo. A field inspection and evaluation of the existing facilities in the port disclosed that there are 53 locations now identified as pier locations on the Port of Wilmington waterfront. This number by itself, however, gives a completely erroneous impression as to the capacity of the port to handle deep-water cargo efficiently in view of the fact that:

1. Of the 53 pier locations in the Port of Wilmington, 32 are unsuitable for berthing ocean-going vessels used in world trade today because they are less than 500 feet long.

2. Of the 21 pier locations which are 400 feet or longer, 18 are not considered to have any capacity for general cargo because:

   a. Four are old unused shipyard piers owned by the Federal Government which are in varying stages of decay and ruin.

   b. One is a pier owned by the Federal Government which is used for mooring floating equipment of the Corps of Engineers.

   c. Two are industrial piers used exclusively for handling bulk dry cargoes.

   d. One is a pier used exclusively for the handling of barge movements of logs.

   e. Eight are piers owned by oil companies or bulk liquid terminal companies which are used almost exclusively for the handling of bulk liquid cargoes.

   f. Two are railroad-owned piers which are used exclusively for the handling of bulk dry cargo.

3. This leaves only 3 pier locations in the Port of Wilmington which are used for and are considered to have any capacity for general cargo, of which only one is of modern construction and layout.

A drawing showing the Port Authority's installation at Wilmington is given in Exhibit 6 which appears on Page 32.

Port of Southport

The Port of Southport is located on the right bank of the Cape Fear River approximately 2 miles above its mouth. Although its shore line lies along the main channel of the river, it is not developed as a seaport and has no facilities to accommodate ocean-going vessels. The Atlantic intracoastal waterway passes the Port in the Cape Fear River, and then proceeds just south of the port in a westerly direction to enter the Elizabeth River. Although there is a large movement of commercial tonnage along this waterway, none is being handled through the Port of Southport at present. A drawing of the Port of

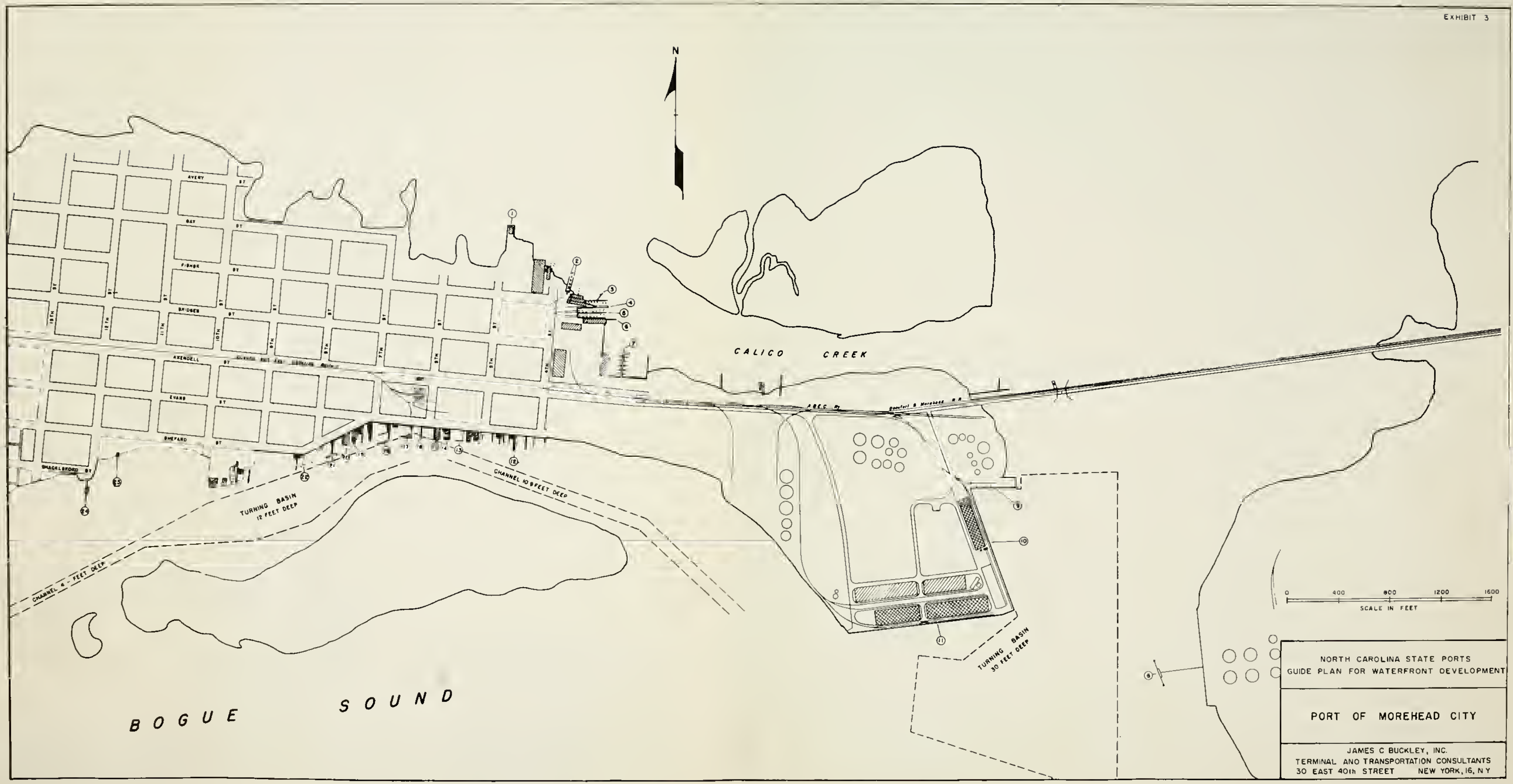
Southport is submitted as Exhibit 7 which appears on Page 33.

There are a number of small shallow-draft piers in the harbor for the accommodation of fishing boats and pleasure craft. Although a detailed inspection of these facilities was not made, it was noted that they are all in the nature of small-boat facilities with piled wooden walkways leading out to mooring platforms. Specific examples of the use of such facilities are as follows:

1. A municipal pier for the docking of pleasure craft.
2. A large mooring for Menhaden fishing boats.
3. A shrimp packing house receiving pier.
4. A yacht basin.
5. A small craft service station.
6. A pier for the receipt of live fish at a Menhaden fish processing plant.

The McLean interests are said to have taken an option on a substantial block of waterfront land on the north side of Southport as a prospective location for a trailer ferry terminal for use by the Pan Atlantic Steamship Company in coastwise, intracoastal or Puerto Rico service. The right of Pan Atlantic to serve North Carolina ports, and the right of the McLean interests to continue in control of Pan Atlantic, are still subject to final action by the Interstate Commerce Commission.

EXHIBIT 3

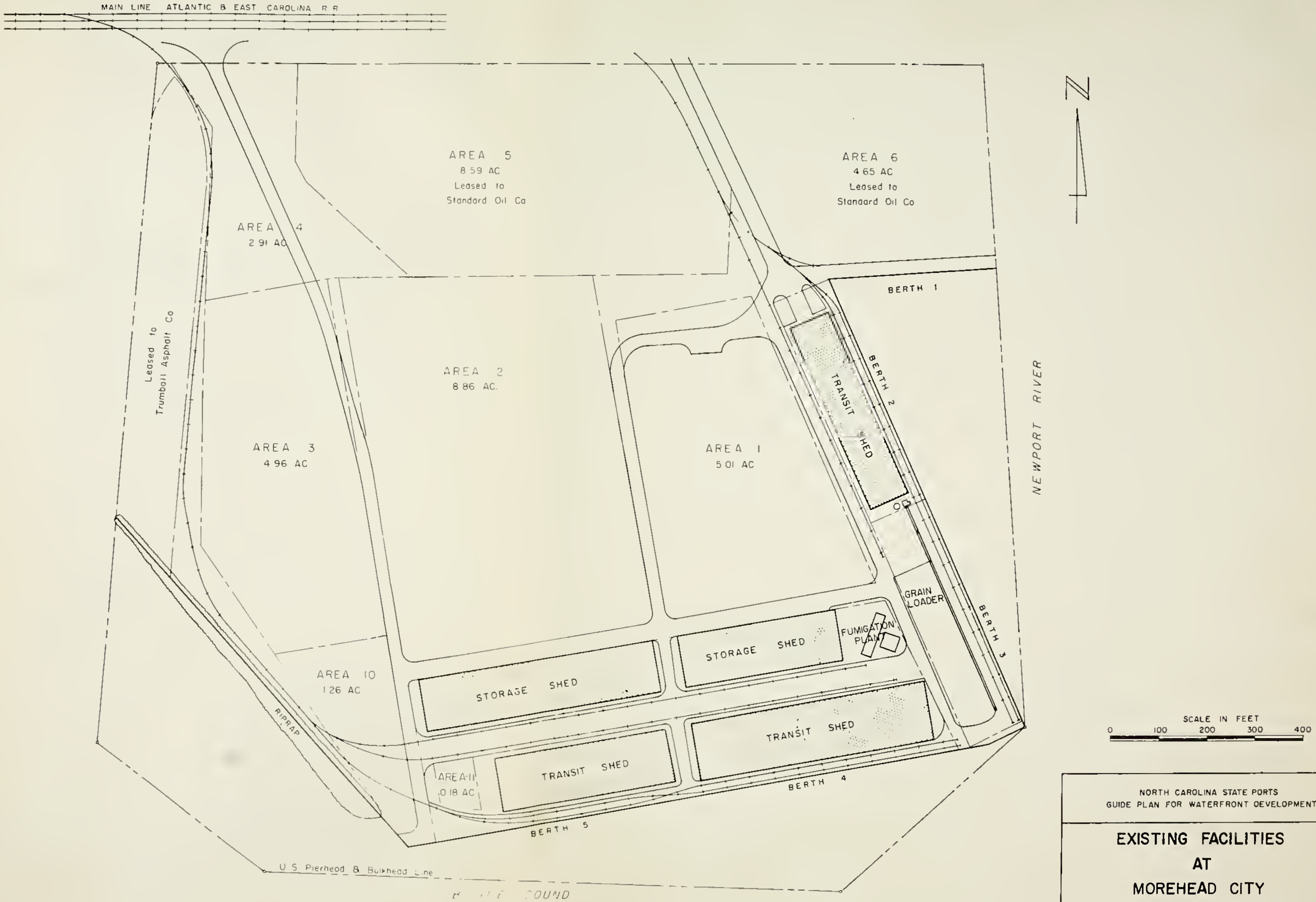


NORTH CAROLINA STATE PORTS
GUIDE PLAN FOR WATERFRONT DEVELOPMENT

PORT OF MOREHEAD CITY

JAMES C BUCKLEY, INC.
TERMINAL AND TRANSPORTATION CONSULTANTS
30 EAST 40th STREET NEW YORK, 16, N.Y.

EXHIBIT 4

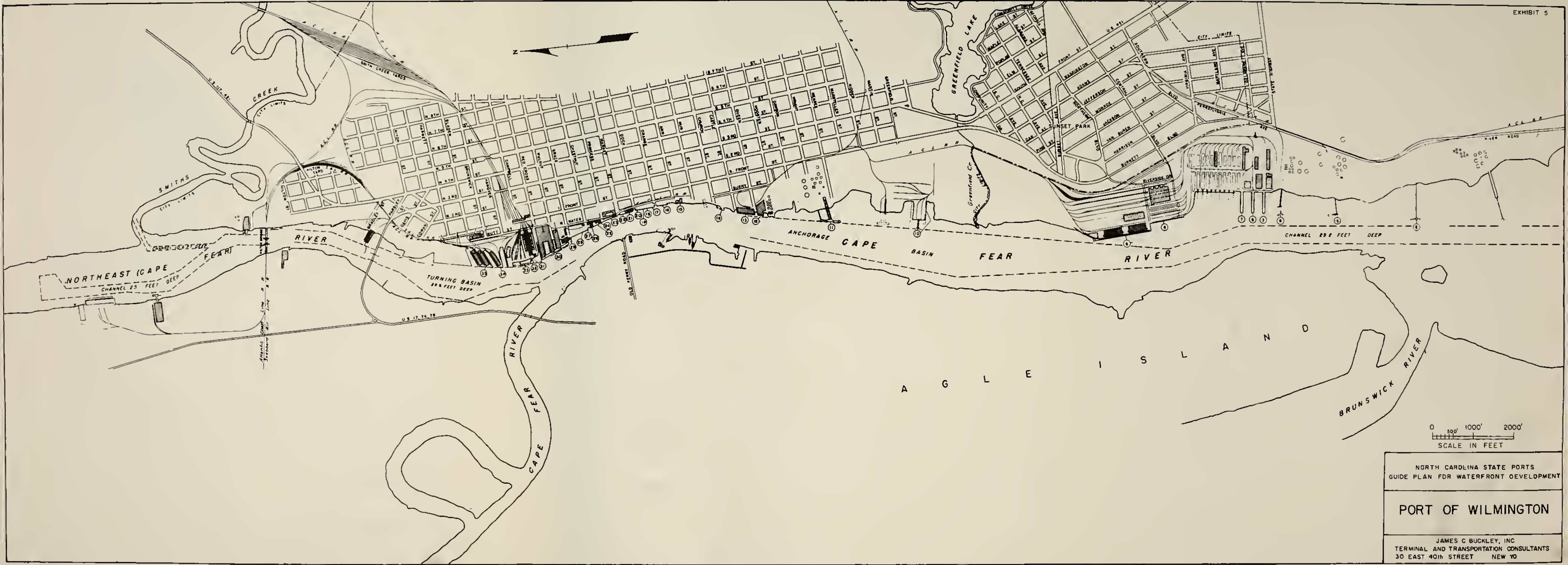


NORTH CAROLINA STATE PORTS
GUIDE PLAN FOR WATERFRONT DEVELOPMENT

EXISTING FACILITIES
AT
MOREHEAD CITY

JAMES C. BUCKLEY, INC
TERMINAL AND TRANSPORTATION CONSULTANTS
30 EAST 40th STREET NEW YORK, 16, N Y

EXHIBIT 5

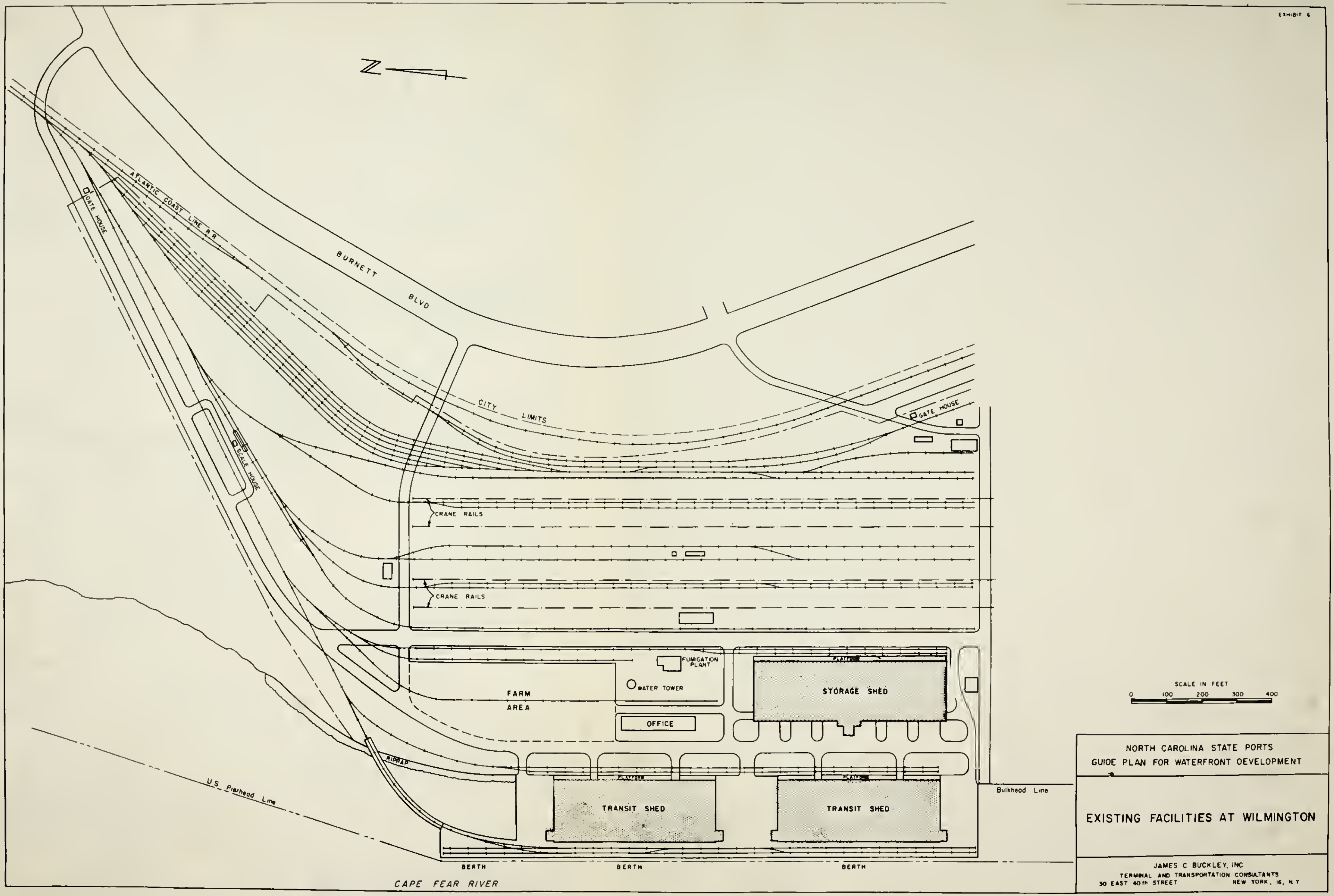


NORTH CAROLINA STATE PORTS
GUIDE PLAN FOR WATERFRONT DEVELOPMENT

PORT OF WILMINGTON

JAMES C BUCKLEY, INC
TERMINAL AND TRANSPORTATION CONSULTANTS
30 EAST 40th STREET NEW YO

EXHIBIT 6

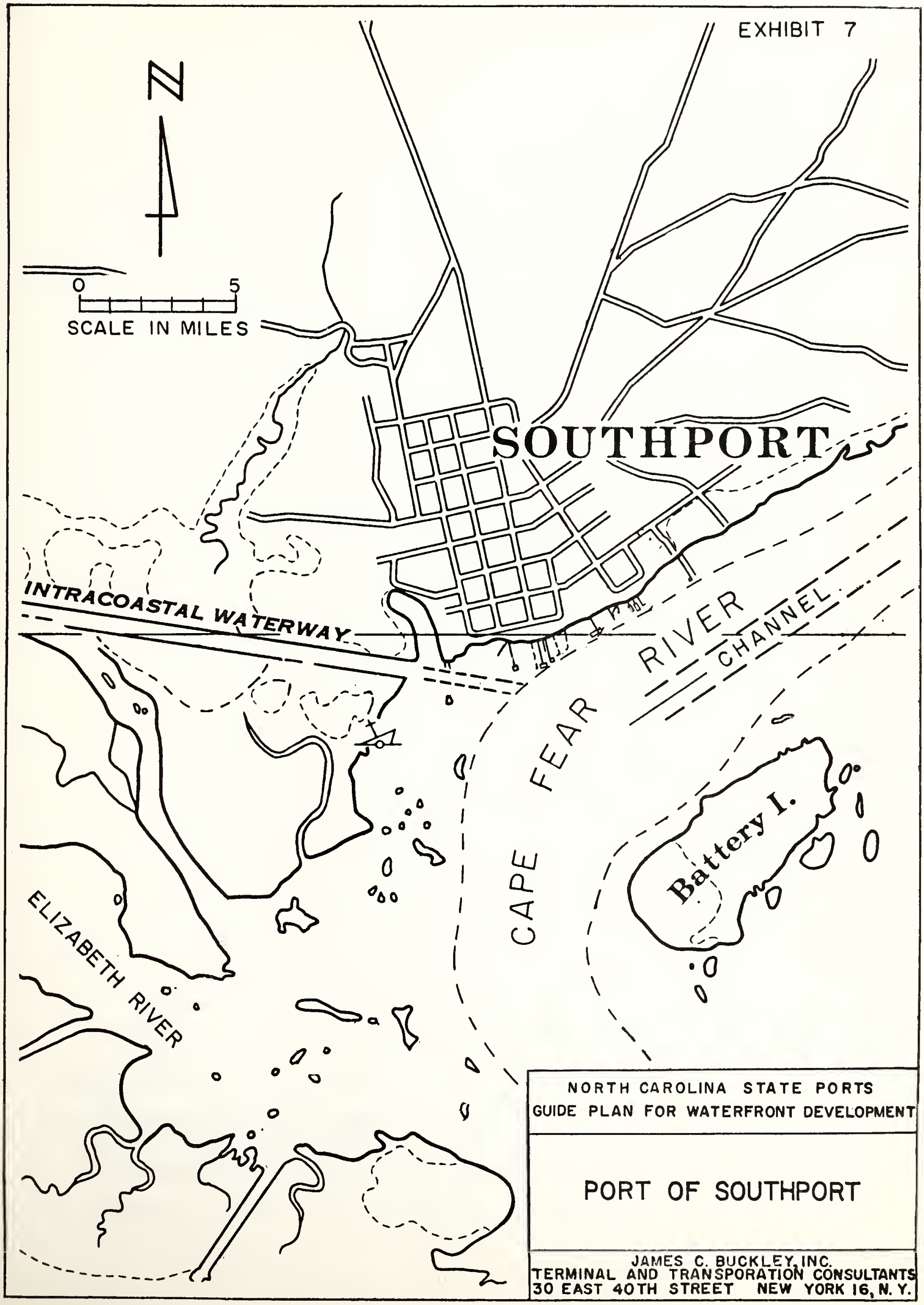


NORTH CAROLINA STATE PORTS
GUIDE PLAN FOR WATERFRONT DEVELOPMENT

EXISTING FACILITIES AT WILMINGTON

JAMES C. BUCKLEY, INC.
TERMINAL AND TRANSPORTATION CONSULTANTS
30 EAST 40th STREET NEW YORK, 16, N.Y.

EXHIBIT 7



NORTH CAROLINA STATE PORTS
GUIDE PLAN FOR WATERFRONT DEVELOPMENT

PORT OF SOUTHPORT

JAMES C. BUCKLEY, INC.
TERMINAL AND TRANSPORATION CONSULTANTS
30 EAST 40TH STREET NEW YORK 16, N. Y.

IV. The North Carolina Economic Profile

The economy of North Carolina reflects the strong forces of growth and change which have been in evidence throughout the southeastern portion of the country for a generation. While the Southeastern states as a group still account, in most fields, for a smaller portion of national economic activity than would be proportional to their population, their share of the national total has steadily increased in almost every field of basic economic activity. Data bearing on this point are given in Exhibit 8 which appears on Page 47 . From this Exhibit it will be noted that while the Southeastern states as a group have accounted for between 20.7% and 21.6% of national population over the past 35 years,

1. Their portion of national wholesale sales increased from 10.9% to 12.9% between 1939 and 1954.
2. Their portion of national retail sales increased from 13.0% to 15.8% between 1939 and 1954.
3. Their portion of national value added by manufacture increased from 10.5% to 11.7% between 1939 and 1954.
4. Their portion of national manufacturing establishments increased from 12.6% to 14.8% between 1939 and 1954.
5. Their portion of national personal income increased from 10.7% to 14.4% between 1929 and 1955.
6. Their per capita personal income increased from 51% of the national average in 1929 to 70% of the national average in 1955.

It may reasonably be concluded with respect to the economy of the Southeastern states as a whole that they have substantially maintained their share of the national population whilst progressively improving their participation in national economic activity, thus improving the position of their citizens and taxpayers and the economic position of the individual states and commun-

ities within the states.

Within this framework of growth and change, North Carolina is outstanding. On most economic indicators, it has done as well or better than the Southeastern states as a whole. Data on the economy of North Carolina in relation to the economy of the Southeastern states are given in Exhibit 9 which appears on Page 49 . From this Exhibit, it will be noted that:

1. North Carolina's portion of the total population of the Southeastern states increased from 11.2% in 1920 to 12.6% in 1956.

2. North Carolina has maintained its position in wholesale sales among the Southeastern states, accounting for 13.8% in 1939, 14.9% in 1948, and 13.8% again in 1954.

3. North Carolina has increased its portion of the total retail sales in the Southeastern states from 11.6% in 1939 to 12.0% in 1954.

4. Only in manufacturing has North Carolina lost some ground among the Southeastern states,

    a. Value added by manufacture in North Carolina decreasing from 21.1% of the Southeastern states in 1939 to 16.2% in 1954.

    b. Manufacturing employees in North Carolina decreasing from 21.6% of the Southeastern states in 1939 to 19.0% in 1954.

5. In terms of number of industrial establishments, however, those in North Carolina increased from 14.4% of the total in the Southeastern states in 1939 to 15.6% in 1954.

6. Total personal income in North Carolina increased from 11.1% of the Southeastern states in 1939 to 12.3% in 1955.

7. Per capita personal income in North Carolina increased from 89.8% of the average for the Southeastern states in 1929 to 100.5% of the average in 1950, but dropped back to 95.7% of the average in 1955.

8. In the agricultural field, however, there has been a downward trend in North Carolina, with its portion of the total value of farm products sold in the Southeastern states declining from 16.1% in 1940 to 14.6% in 1950.

The economic factors described above indicate a balancing of the economy in North Carolina as between agriculture, manufacturing, and trade and services.. Less than proportional increases in mamufacturing and agriculture have been offset in general by more than proportional increases in trade and service activity. The North Carolina economy appears to be balancing out, and thus avoiding primary dependence upon any given type of economic activity. This is illustrated to some extent by a comparison of economic indicators for North Carolina with the same indicators for the country as a whole. For example:

1. Population in North Carolina increased 13.7% between 1940 and 1950 as against a national increase of 14.5%.
2. Retail sales in North Carolina increased 253% as between 1939 and 1948, and a further 44% between 1948 and 1954; as against national increases of 206% and 32% respectively.
3. Wholesale sales in North Carolina increased 270% between 1939 and 1948, and a further 37% between 1948 and 1954; as against national increases of 229% and 30% respectively.
4. Manufacturing establishments in North Carolina increased 69% between 1939 and 1947, and a further 25% between 1947 and 1954; as against national increases of 39% and 20% respectively.
5. Personal income in North Carolina increased 263% between 1940 and 1950 as against a national increase of 197%.

Particularly significant in this general picture of growth and change in North Carolina is the fact that it is an economy which has been broadening as well as growing, an economy where the total employment and economic activity have increased at rates as great or greater than its region and in the country as a whole, but with the growth moving into new fields of activity rather than being concentrated in the traditional areas of agriculture and manufacturing.. Such a pattern of growth indicates clearly a strong and adaptable economic base pressing forward on all fronts into new fields of

profitable economic activity, both within and without the established patterns.

While the above observations relate primarily to census data and census years, North Carolina has maintained its share of national employment in non-agricultural establishments within a very narrow range during the period 1950-1956, which was a period of very strong national expansion in non-agricultural activity all over the country. The data on this point, from the Bureau of Labor Statistics of the United States Department of Labor, are as follows:

Employment in Non-Agricultural Establishments
in North Carolina in Relation to National Totals

		North Carolina	
Year (1)	United States (millions) (2)	Number (thous.) (3)	% of U.S. (4)
1950	44,738	911.4	2.04
1951	47,347	970.8	2.05
1952	48,303	992.1	2.05
1953	49,681	1,012.0	2.04
1954	48,431	1,001.8	2.07
1955	49,950	1,036.9	2.08
1956	50,803	1,036.7	2.04

During the above period, as well as previously, there have been marked indications of changes in the distribution of non-agricultural employment within the State. The distribution of non-agricultural employment in North Carolina by industrial groups for 1940, 1945, 1950 and 1955 is shown in Exhibit 10 which appears on Page 51 . From this exhibit, the following changes in percentage distribution of non-agricultural employment among industry groups will be noted:

Percentage Distribution of Non-Agricultural Employment in North Carolina

Industry	Percentage Distribution of Non-Agricultural Employment 1940	1945	1950	1955
Mining	0.4	0.3	0.4	0.4
Contract construction	4.0	2.1	5.3	4.9
Manufacturing	50.7	50.1	45.9	44.0
Transp. & Pub. Util.	5.5	6.6	6.0	5.8
Trade	16.8	16.4	18.5	20.0
Finance, Ins., & R.E.	2.3	1.8	2.4	3.0
Service & Misc.	8.7	8.7	9.3	8.9
Government	11.6	14.0	12.2	13.0

Of particular significance in the above data is the gradual decrease in the importance of manufacturing as a source of employment in the State's economy, the substantial increase in the importance of trade, and increases in the importance of finance, insurance, real estate and other service industries.

Further evidence of the broadening of the North Carolina economic base is found in the change in the distribution by industry of persons employed in North Carolina between 1940 and 1950. These data are submitted as Exhibit 11 which appears on Page 52 . From this exhibit, it will be noted that:

1. Persons employed in agriculture, forestry and fisheries declined from 33.8% of the total in 1940 to 24.8% of the total in 1950.

2. Persons employed in manufacturing increased from 26.9% of the total in 1940 to 28.0% in 1950.

3. Persons employed in wholesale and retail trade increased substantially relative to other industries, from 10.5% of the total in 1940 to 14.3% in 1950.

4. Persons employed in various service activities, including finance, insurance, real estate, business and repair services, and professional and related service, also increased significantly from 7.7% of the total in 1940 to 10.2% in 1950.

Data with respect to the change in the distribution of employed persons by occupation between 1940 and 1950 indicate the same trend toward a greater diversity in the State's economic base. These data are given in Exhibit 12 which appears on Page 53 . From this exhibit, it will be noted that:

1. Farmers, farm managers, and farm laborers and foremen accounted for only 24.4% of the persons employed in 1950 as against 33.5% in 1940.

2. All other occupational groups gained relatively except private household workers and laborers.

3. Not only did laborers decrease both absolutely and relatively, but the relative increase in operatives and kindred workers was less than in craftsmen, foremen, and kindred workers; in sales workers; in clerical and kindred workers; in managers, officials, and proprietors, except farm; or in professional, technical and kindred workers.

Within the range of manufacturing activity alone, there also appear to be shifts away from the established pattern in North Carolina, but these are not so clearly evident from the data generally available. To illustrate, the distribution of value added by manufacture in North Carolina by major industry group is given in Exhibit 13 which appears on Page 54 , and the distribution of the number of manufacturing establishments in North Carolina by major industry group is given in Exhibit 14 which appears on Page 55 . The rank of each major group on the basis of value added and on the basis of number of establishments for the years of 1939, 1947, and 1954 are given in Exhibit 15 which appears on Page 56 . From this last exhibit, minor changes in rank do appear, but basic changes in manufacturing trends are probably almost wholly obscured by the effect of the large established activity.

Some indication of the direction of current manufacturing trends in the State can be gained from a comparison of the distribution of new and proposed industries in North Carolina for 1954 and 1955 as compiled by the Department

of Conservation and Development, with the distribution of all industrial establishments in 1954 as shown in the Census of Manufacturers. A comparison of the ten industry groups which accounted for the greatest number of new and proposed industrial establishments in North Carolina in 1954 and 1955 with their rankings on the basis of establishments in the Census of Manufacturers for 1954, is as follows:

Industry Group	Rank on Basis of New & Proposed Establishments in 1954 and 1955	Rank on Basis of total Estab. 1954
Textiles	1	2
Apparel	2	9
Furniture and Fixtures	3	5
Food and Kindred products	4	3
Lumber & wood (ex. furniture)	5	1
Machinery (ex. electrical)	6	8
Chemical & allied	7	7
Stone, clay & glass products	8	6
Fabricated metal products	9	10
Electrical machinery	10	n.r.

n.r. = not reported.

Significant in the above tabulation is the appearance of electrical machinery among the top ten industry groups in terms of new establishments; the number two ranking of the apparel industries in terms of new establishments, as against a ranking of ninth in terms of total establishments; and a ranking of fifth for lumber and wood products, other than furniture, in terms of new establishments as against a ranking of first on the basis of total establishments. To the extent that these data are indicative of trends, it would appear that there is a spreading out of manufacturing activity within the State among several new industries, less reliance on some of the established industries, and an increasing movement in the textile industry to carry the manufacturing activity on through into finished products within the State. All of these apparent ten-

dencies carry out the general conclusion that in this period of growth and change there is a broadening of the State's economic base within manufacturing, as well as on an overall basis.

The analysis of deep-water commerce at the North Carolina ports does not, however, show the same effect of change and growth which are found in the broadening state-wide economic base. On an overall basis, the figures with respect to total deep-water tonnage at North Carolina ports appear very favorable. The data are as follows:

Deep-Water Tonnage at Coastal Ports in North Carolina and Adjoining States

	South Carolina		North Carolina		Virginia	
Year	Amount (thous)	Index (1930=100)	Amount (thous)	Index (1930=100)	Amount (thous)	Index (1930=100)
1930	2,409	100	990	100	22,026	100
1940	2,093	87	1,985	201	26,899	122
1950	3,156	131	3,249	328	20,068	91
1954	3,210	133	3,201	323	30,381	138

On the surface, the above record shows a very satisfactory rate of growth, with the North Carolina ports showing relatively a much greater tonnage increase over the past 25 years than either the South Carolina or the Virginia coastal ports. When the export-import tonnage is examined separately, however, the growth picture is completely reversed as shown by the following data:

Export-Import Tonnage at Coastal Ports in North Carolina and Adjoining States

	South Carolina		North Carolina		Virginia	
Year	Amount (thous)	Index (1930=100)	Amount (thous)	Index (1930=100)	Amount (thous)	Index (1930=100)
1930	761	100	304	100	3,063	100
1940	674	89	201	66	4,981	103
1950	1,068	140	332	109	4,473	146
1954	1,457	191	507	167	18,123	592

Only in the past four years have the North Carolina ports shown any significant improvement in export-import tonnage. Even with that improvement, their growth in this type of tonnage over the past twenty-five years has been considerably less than at the South Carolina or Virginia ports. Further light is shed on the export-import trade by the number of commodity groups in which export or import tonnage moved through each coastal port during 1954. These data are as follows:

State and Coastal Ports	Commodity Groups Covered by Foreign Trade - 1954
Virginia	
Newport News	110
Norfolk	152
North Carolina	
Morehead City	4
Wilmington	58
South Carolina	
Charleston	105
Georgetown	9

Not only have the North Carolina ports failed to keep pace with the Virginia and South Carolina ports in terms of export-import tonnage, but they are handling a much smaller array of commodities in foreign trade than the ports in Virginia and South Carolina.

The remainder of the deep-water tonnage at the North Carolina ports consists of coastwise tonnage which compares with that handled at the Virginia and South Carolina coastal ports as follows:

Coastwise Tonnage at Coastal Ports in North Carolina and Adjoining States

	South Carolina		North Carolina		Virginia	
Year	Amount (thous)	Index (1930=100)	Amount (thous)	Index (1930=100)	Amount (thous)	Index (1930=100)
1930	1,648	100	686	100	18,963	100
1940	1,418	86	1,784	261	21,918	116
1950	2,088	127	2,989	436	15,595	82
1954	1,753	106	2,694	392	12,258	65

On the basis of the above data, it would appear that little concern need be felt for the North Carolina ports from the standpoint of generating coastwise tonnage. An analysis of 1954 tonnage at the various ports paints a somewhat different picture, however, from the standpoint of the general service of the ports to industry and coastwise trade. If bulk movement of dry and liquid cargo in coastwise trade, including coal and coke, molasses, petroleum products, phosphate fertilizer material and sulphur, be eliminated from the 1954 coastwise tonnages for each group of ports, the remaining tonnage is as follows:

North Carolina ports	0 tons
South Carolina ports	118,000 tons
Virginia ports	194,000 tons

The North Carolina ports are virtually out of the coastwise trade except for a few dry and liquid bulk cargo items. This is brought out also by a count of the number of different commodity groups into which the coastwise trade of each of the ports fell during the year 1954. The results of this count are as follows:

State and Coastal Ports	Commodity Groups Covered by Coastwise Trade - 1954
Virginia	
Newport News	5
Norfolk	76
North Carolina	
Morehead City	6
Wilmington	10
South Carolina	
Charleston	58
Georgetown	1

The low volume of foreign trade at North Carolina ports, and the restricted coverage of that trade from the standpoint of commodities, is surprising in view of the conclusions of a study published in 1951 by the Department of State of the Federal Government which includes the following statement:

> "North Carolina is a producer of agricultural and industrial export commodities, many of its manufacturing industries depend upon imported raw materials, and it has commercial and financial interests which are benefited by foreign trade."

As stated in that report, there are no statistics available which give exact figures covering exports of goods produced in North Carolina. The report went on to say, however:

> "***Nevertheless, there is factual evidence which indicates that exports play an important part in the industrial prosperity of the state and are responsible for the employment of several thousands of workers in high-wage industries.
>
> "In 1947 over 300,000, or about 80 percent of the total number of North Carolina workers in manufacturing industries were employed in the major industries producing goods which the United States exports in greater quantities than it imports."

Based on the 1947-1949 data which were included in the State Department's study, agricultural and manufacturing production in North Carolina in that period probably resulted in exports with a value of at least $360,000,000. At an assumed average value of $1,000 per ton, this export trade produced in

North Carolina would have meant exports of 360,000 tons through the North Carolina ports. Goods actually exported through the North Carolina ports in 1950 amounted to 21,700 tons.

While not susceptible of even rough estimation, it is equally true that North Carolina's industry and agriculture generate a substantial demand for imported raw materials. The State Department study to which reference has been made mentions, in this connection,

1. Sodium nitrate imports from Chile which are required to supply fertilizer for North Carolina growers of corn and cotton.
2. Imports of mahogany logs and dressed lumber, lac and shellac, and carnauba wax for the North Carolina household and office furniture industries.
3. Imports of Turkish tobacco for blending with domestic tobacco in North Carolina's cigarette factories.
4. Imports of crude licorice for use by North Carolina manufacturers of chewing and smoking tobacco.
5. Imports of newsprint, lead pigs and bars, antimony metal and tin for North Carolina printing and publishing industries.

There is no question but what the North Carolina economy is generating far more deep-water tonnage than has moved or is moving through the North Carolina ports. It seems equally clear that much of this tonnage is moving through coastal ports in Virginia and South Carolina since the economic bases of these states will not in themselves justify their lead over North Carolina's ports in export-import and other deep-water tonnage through the coastal ports. To illustrate this point, the following data are pertinent:

1. In terms of manufacturing industries with 100 employees and over, in 1947,
    a. North Carolina had 792

b.	South Carolina had	295
c.	Virginia had	358

2. In terms of value added by manufacture, in 1947

a.	North Carolina reported	$1,646,673,000
b.	South Carolina reported	$ 794,312,000
c.	Virginia reported	$1,051,629,000

3. In terms of the value of farm products sold in 1950,

a.	North Carolina reported	$ 556,628,000
b.	South Carolina reported	$ 213,562,000
c.	Virginia reported	$ 309,644,000

It can only be concluded from the facts here presented that North Carolina generates far more deep-water commerce than is using its ports; that there is, therefore, a major place for port development in the economy of the State; but that there is a major problem of gearing the State's ports to its industry, and the State's industry to its ports, if the basic economy of the State is to enjoy the full benefit of its readily available deep-water transportation.

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The Southeastern States In Relation To The National Economy

Item (1)		Unit (2)	United States (3)	Southeastern States: Amount or Number (4)	Southeastern States: Percent of United States (5)
1.	**Population**				
	a. 1920	thous.	105,711	22,860	21.6
	b. 1930	"	122,775	25,551	20.8
	c. 1940	"	131,669	28,262	21.5
	d. 1950	"	150,697	31,784	21.1
	e. 1956 (est.)	"	165,812	34,349	20.7
2.	**Wholesale Sales**				
	a. 1939	$ million	54,898	5,975	10.9
	b. 1948	"	180,577	20,521	11.4
	c. 1954	"	234,974	30,236	12.9
3.	**Retail Sales**				
	a. 1939	$ million	42,042	5,462	13.0
	b. 1948	"	128,849	19,126	14.8
	c. 1954	"	169,968	26,854	15.8
4.	**Value Added by Manufacture**				
	a. 1939	$ million	26,487	2,574	10.5
	b. 1947	"	74,426	8,693	11.7
	c. 1954	"	116,001	13,585	11.7
5.	**Manufacturing Employees**				
	a. 1939	thous.	9,527	1,368	14.3
	b. 1947	"	14,294	1,947	13.6
	c. 1954	"	16,135	2,253	14.0
6.	**Manufacturing Establishments**				
	a. 1939	number	173,802	21,901	12.6
	b. 1947	"	240,881	33,884	14.1
	c. 1954	"	288,144	42,669	14.8

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			Southeastern States	
Item	Unit	United States	Amount or Number	Percent of United States
(1)	(2)	(3)	(4)	(5)
7. Personal Income				
a. 1929	$ million	82,617	8,681	10.7
b. 1940	"	75,852	9,043	12.2
c. 1950	"	225,473	31,990	14.2
d. 1955	"	303,391	43,758	14.4
8. Per Capita Personal Income				
a. 1929	$	680	344	51.0
b. 1940	"	575	322	57.0
c. 1950	"	1,491	1,004	67.0
d. 1955	"	1,847	1,292	70.0
9. Value of Farm Products Sold				
a. 1940	$ million	6,682	1,234	18.5
b. 1950	"	22,052	3,804	17.2

Sources:

Items 1a - 1d:	U. S. Censuses of Population
Item 1e :	Sales Management Magazine
Items 2 and 3:	U. S. Censuses of Business
Items 4 - 6 :	U. S. Censuses of Manufactures
Items 7 and 8:	U. S. Department of Commerce, Office of Business Economics
Item 9 :	U. S. Census of Agriculture

Exhibit 9
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North Carolina In Relation To The Economy of The Southeastern States

Item (1)	Unit (2)	Southeastern States (3)	North Carolina: Amount or Number (4)	North Carolina: Percent of Southeastern States (5)
1. Population				
a. 1920	thous.	22,860	2,559	11.2
b. 1930	"	25,551	3,170	12.4
c. 1940	"	28,262	3,572	12.6
d. 1950	"	31,784	4,062	12.8
e. 1956 (Est.)	"	34,349	4,337	12.6
2. Wholesale Sales				
a. 1939	$ million	5,975	827	13.8
b. 1948	"	20,521	3,056	14.9
c. 1954	"	30,236	4,184	13.8
3. Retail Sales				
a. 1939	$ million	5,462	633	11.6
b. 1948	"	19,126	2,234	11.7
c. 1954	"	26,854	3,210	12.0
4. Value Added by Manufacture				
a. 1939	$ million	2,574	544	21.1
b. 1947	"	8,693	1,647	18.9
c. 1954	"	13,585	2,197	16.2
5. Manufacturing Employees				
a. 1939	thous.	1,358	293	21.6
b. 1947	"	1,947	381	19.6
c. 1954	"	2,253	427	19.0
6. Manufacturing Establishments				
a. 1939	number	21,901	3,158	14.4
b. 1947	"	33,884	5,322	15.7
c. 1954	"	42,669	6,653	15.6

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Item	Unit	Southeastern States	North Carolina	
			Amount or Number	Percent of Southeastern States
(1)	(2)	(3)	(4)	(5)
7. Personal Income				
a. 1929	$ million	8,681	966	11.1
b. 1940	"	9,043	1,131	12.5
c. 1950	"	31,990	4,108	12.8
d. 1955	"	43,758	5,371	12.3
8. Per Capita Personal Income				
a. 1929	$	344	309	89.8
b. 1940	"	322	316	98.1
c. 1950	"	1,004	1,009	100.5
d. 1955	"	1,292	1,236	95.7
9. Value of Farm Products Sold				
a. 1940	$ million	1,234	199	16.1
b. 1950	"	3,804	557	15.6

Sources:

Items 1a - 1d: U. S. Censuses of Population.
Item 1e : Sales Management Magazine, Annual Survey of Buying Power, 1956.
Items 2 and 3: U. S. Censuses of Business.
Items 4 - 6 : U. S. Censuses of Manufactures.
Items 7 and 8: U. S. Department of Commerce, Office of Business Economics.
Item 9 : U. S. Census of Agriculture.

Exhibit 10
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Industrial Distribution of Non-Agricultural Employment in North Carolina

Industry	1955		1950		1945		1940	
	Number (thous)	% of total	Number (thous)	% of total	Number (thous)	% of total	Number (thous)	% of total
Mining	4.0	0.4	3.4	0.4	2.2	0.3	2.7	0.4
Contract Construction	51.0	4.9	48.0	5.3	16.0	2.1	25.6	4.0
Manufacturing	456.9	44.0	418.3	45.9	374.3	50.1	325.9	50.7
Transportation and public utilities	60.2	5.8	55.0	6.0	49.0	6.6	35.1	5.5
Trade	207.0	20.0	168.8	18.5	122.7	16.4	107.9	16.8
Finance, insurance and real estate	31.1	3.0	21.6	2.4	13.8	1.8	15.0	2.3
Service and miscellaneous	92.1	8.9	84.7	9.3	64.7	8.7	56.0	8.7
Government	134.6	13.0	111.6	12.2	104.2	14.0	74.5	11.6
Total	1,036.9	100.0	911.4	100.0	746.9	100.0	642.7	100.0

Source: U. S. Department of Labor, Bureau of Labor Statistics

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Distribution by Industry of Persons Employed in North Carolina

	Persons Employed			
	1950		1940	
Industry	Number	%	Number	%
Agriculture, forestry and fisheries	363,439	24.8	409,050	33.8
Mining	3,076	0.2	2,914	0.2
Construction	86,432	5.9	46,971	3.9
Manufacturing	408,904	28.0	325,539	26.9
Transportation, Communication and other public utilities	65,378	4.5	41,123	3.4
Wholesale and retail trade	209,598	14.3	126,712	10.5
Finance, insurance and real estate	24,408	1.7	15,416	1.3
Business and repair services	25,920	1.8	13,371	1.1
Personal services	106,776	7.3	115,433	9.6
Entertainment and recreation service	10,174	0.7	5,717	0.5
Professional and related services	97,863	6.7	63,684	5.3
Public administration	38,655	2.6	26,995	2.2
Industry not reported	21,957	1.5	15,765	1.3
Total	1,462,580	100.0	1,208,690	100.0

Source: U.S. Census

Exhibit 12
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Distribution of Employed Persons in North Carolina by Occupation

1940 and 1950

Occupation Group	Persons Employed			
	1950		1940	
	Number	%	Number	%
Professional, technical and kindred workers	86,426	5.9	60,592	5.0
Farmers and farm managers	226,136	15.5	247,202	20.5
Managers, officials and proprietors, except farm	93,740	6.4	61,980	5.2
Clerical and kindred workers	97,651	6.7	53,519	4.4
Sales workers	85,024	5.8	53,847	4.5
Craftsmen, foremen, and kindred workers	152,276	10.4	86,451	7.2
Operatives and kindred workers	351,066	24.0	256,768	21.3
Private household workers	55,957	3.8	74,949	6.2
Service workers, excluding private household	77,534	5.3	51,421	4.3
Farm laborers and foremen	130,199	8.9	156,114	13.0
Laborers, except farm and mine	84,690	5.8	88,753	7.4
Occupation not reported	21,881	1.5	11,594	1.0
Total	1,462,580	100.0	1,203,190	100.0

Source: U.S. Census

Exhibit 13
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Value Added by Manufacture in North Carolina by Major Industry Groups

Major Industry Group (1)	1954 Value Added (2)	1954 Percent of Total (3)	1947 Value Added (4)	1947 Percent of Total (5)	1939 Value Added (6)	1939 Percent of Total (7)
Food & kindred products	154,001	7.0	78,430	4.7	28,939	5.3
Tobacco manufactures	390,064	17.7	257,886	15.7	120,740	22.2
Textile mill products	829,131	37.7	846,280	51.4	265,154	48.7
Apparel & related prods.	88,413	4.0	43,852	2.7	7,194	1.3
Lumber & prods., ex. furn.	100,063	4.6	84,127	5.1	23,357	4.3
Furniture & fixtures	139,698	6.4	102,447	6.2	28,136	5.2
Paper and allied products	91,424	4.2	47,395	2.9	11,341	2.1
Printing & publishing prods.	45,428	2.1	25,369	1.5	10,132	1.9
Chemicals & allied prods.	103,854	4.7	58,607	3.6	25,809	4.8
Leather & Leather prods.	5,755	0.3	10,756	0.6	2,752	0.5
Stone, clay & glass prods.	33,964	1.5	19,519	1.2	6,140	1.1
Primary metal industries	13,587	0.6	6,483	0.4	6,748	1.2
Fabricated metal products	32,743	1.5	11,909	0.7	1,822	0.3
Machinery (except elec.)	36,589	1.7	17,416	1.1	3,930	0.7
Transportation equipment	39,336	1.8	5,218	0.3	1,065	0.2
Instruments & rel. prods.	4,350	0.2	199	..	..	..
Miscellaneous mfrs.	7,241	0.3	2,854	0.2	688	0.1
Other	81,920	3.7	27,826	1.7	234	0.1
Total	2,197,461	100.0	1,646,673	100.0	544,181	100.0

Source: Censuses of Manufacturers

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Number of Manufacturing Establishments in North Carolina

Major Industry Group	1954		1947		1939	
	Number	Percent of Total	Number	Percent of Total	Number	Percent of Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Food & kindred products	845	12.7	728	13.7	637	20.2
Tobacco manufactures	58	0.9	69	1.3	15	0.5
Textile mill products	1,023	15.4	939	17.6	695	22.0
Apparel & related prods.	208	3.1	144	2.7	53	1.7
Lumber & prods., ex.furn.	2,485	37.3	1,864	35.0	815	25.8
Furniture & fixtures	429	6.4	372	7.0	162	5.1
Paper & allied products	67	1.0	47	0.9	37	1.2
Printing & publishing inds.	430	6.5	363	6.8	273	8.6
Chemicals & allied prods.	217	3.3	188	3.5	163	5.2
Leather & leather prods.	35	0.5	20	0.4	16	0.5
Stone, clay & glass prods.	235	3.5	255	4.8	110	3.5
Primary metal industries	40	0.6	43	0.8	25	0.8
Fabricated metal products	136	2.0	63	1.2	24	0.7
Machinery (except elec.)	211	3.2	116	2.2	76	2.4
Transportation equipment	58	0.9	29	0.5	18	0.6
Instruments & rel. prods.	17	0.3	8	0.2	..	..
Miscellaneous mfrs.	104	1.6	58	1.1	34	1.1
Other	55	0.8	16	0.3	5	0.1
Total	6,653	100.0	5,322	100.0	3,158	100.0

Source: Censuses of Manufactures

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North Carolina Industry Groups Ranked by Value Added by Manufacture and by Number of Establishments

Industry Groups	Rank on Value Added 1954	1947	1939	Rank on Number of Establishments 1954	1947	1939
Lumber and products, except furniture	6	4	6	1	1	1
Textile mill products	1	1	1	2	2	2
Food and kindred products	3	5	3	3	3	3
Printing and publishing	9	9	8	4	5	4
Furniture and fixtures	4	3	4	5	4	6
Stone, clay and glass	-	10	-	6	6	7
Chemicals and allied products	5	6	5	7	7	5
Machinery (except electrical)	-	-	-	8	9	8
Apparel and related products	8	8	9	9	8	9
Fabricated metal products	-	-	-	10	-	-
Tobacco manufacture	2	2	2	-	10	-
Paper and allied products	7	7	7	-	-	10
Transportation equipment	10	-	-	-	-	-
Primary metal industries	-	-	10	-	-	-

Source: Censuses of Manufactures.

V. Prospective Total Deep-Water Commerce of North Carolina Ports

As brought out in the preceding chapter, it appears that a substantial volume of deep-water commerce generated by the State of North Carolina is diverted from its own ports to other ports along the Atlantic coast, and particularly to the Hampton Roads ports in Virginia and to the Port of Charleston in South Carolina. The problem of estimating the prospective deep-water commerce of the North Carolina ports involves consideration, therefore, of two controlling and limiting factors. These are:

1. The deep-water tonnage reasonably available to the North Carolina ports were they to serve the trade for which they are favorably located.
2. The extent to which the North Carolina ports can recover the large portion of their available deep-water tonnage which is currently moving through other ports.

Once determinations are made on these points, a basis will be available for a further determination as to the deep-water traffic reasonably available to each of the North Carolina port locations. Such a determination is essential if the physical development of the respective port locations is to proceed on a sound basis.

Since the long-term trend in the deep-water traffic available to the North Carolina ports will be a function of national and regional trends, consideration was given first to such trends. Specifically,

1. To trends and prospects in the deep-water commerce of the country as a whole.
2. To trends and prospects in the total deep-water commerce of the Hampton Roads ports and the South Atlantic ports as a group.

It will be noted that the above discussion relates only to deep-water tonnage and deep-water traffic. This is because the present Study has been limited

to the matter of deep-water cargo. Consequently, consideration of the trends and prospects in the deep-water commerce of each of the areas has covered only cargo moving in foreign or coastwise trade. Coastwise trade is here defined as coastwise movement, intercoastal movement, and movement between the Continental United States and its territorial possessions and Puerto Rico. These are the trades which include all the deep-water movements, the accommodation of which is the objective of the program to be recommended as the result of the present Study.

There is a substantial additional volume of water movement at the various ports which is designated "internal","intraport", or "local". Water traffic is classified as "internal" if the entire movement takes place over inland waterways; as "intraport" if the entire movement takes place between the several arms and channels of a port; and as "local" if the entire movement takes place within the confines of a single arm or channel of a port. Typically, such water traffic is not moving in common-carrier service, and is not using public marine terminal facilities such as are provided by the State of North Carolina. This is illustrated by the following commodity breakdown of such tonnage at the North Carolina ports in 1955:

Internal, Intraport and Local Traffic at North Carolina Ports in 1955

(short tons)

	Tonnage at North Carolina Ports - 1955			
Commodity Group (1)	Internal (2)	Intraport (3)	Local (4)	Total (5)
Fish and Products, Fresh	..	..	559	559
Shellfish and Products	..	..	768	768
Soybeans	1,890	..	..	1,890
Pulpwood	180,448	..	..	180,448
Motor Fuel & Gasoline	192,726	..	1,097	193,823

Commodity Group (1)	Internal (2)	Intraport (3)	Local (4)	Total (5)
Gas Oil, Distillate Fuel Oil	16,318	..	..	16,318
Kerosene	23,400	..	2,348	25,748
Residual Fuel Oil	33,935	..	..	33,935
Petroleum Asphalt	3,006	..	..	3,006
Steel Mill Products	1,946	..	..	1,946
Const. Mining Mach. Parts	1,950	..	..	1,950
Industrial Chem. Nec.	8,088	..	..	8,088
TOTAL	463,707	..	4,772	468,479

Tonnage such as the above was not taken into account in arriving at estimates of national and regional deep-water tonnage, or of deep-water tonnage available to the North Carolina State ports; nor was it taken into account in framing recommendations with respect to a six-year physical development program for the State ports. Consideration has, however, been given to the breakdown of traffic prospectively available to North Carolina ports as between bulk and non-bulk cargo, because of the differences in facilities required to handle these major categories of traffic.

Trends and Prospects in the Deep-water Commerce of the United States

The annual volume of United States foreign and coastwise trade since World War II, with comparable data for selected earlier years, is as follows:

U. S. Foreign and Coastwise Trade

(Millions of Short Tons)

Year	Foreign Imports	Foreign Exports	Foreign Total	Coastwise	Total
1925	42.8	49.3	92.1	105.1	197.2
1930	46.4	48.1	94.5	117.8	212.3
1935	33.9	33.9	67.8	115.4	183.2
1940	40.7	49.6	90.3	156.9	247.2
1946	52.1	96.8	148.9	137.6	286.5
1947	62.2	126.1	188.3	153.1	341.4
1948	72.3	90.7	163.0	174.1	337.1
1949	82.0	83.4	165.4	161.4	326.8
1950	102.0	67.2	169.2	182.5	351.7
1951	108.7	123.3	232.0	186.8	418.8
1952	116.0	111.4	227.4	184.2	411.6
1953	128.0	89.4	217.4	188.8	406.2
1954	129.4	84.4	213.8	187.2	401.0
1955	153.0	118.1	271.1	195.7	466.8
1960-65 (est)	145.0	85.0	230.0	225.0	455.0

From the above data, it will be noted that:

1. The total volume of United States import trade has climbed steadily since the close of World War II, and in 1955 was at a level almost four times that of 1940.

2. The volume of export trade for the country as a whole declined sharply immediately following World War II; almost doubled between 1950 and 1951, reflecting the influence both of the Korean War and the Foreign Aid Programs; and declined steadily after 1951 to a lower figure in 1954 than in any year since 1950. In 1955, however, the national export volume recovered to a level higher than in any year since 1951, and the third highest in the past ten years.

As a result of the generally opposing trends in the volume of import and export trade for the country as a whole, the volume of total foreign trade has usually fluctuated less violently than the volume of the export and import components. The volume of total foreign trade dipped following World War II; increased substantially as a result of the Korean episode; declined slowly after 1951 to a low in 1954 approximately 2.4 times the level of 1940; and then recoved sharply in 1955.

If allowance be made for sustained use of foreign raw materials and a sustained demand for sugar, coffee, and other foodstuffs coming primarily from abroad; and if allowance be made for cut-backs in the Foreign Aid Programs; and if it be assumed that the domestic economy will continue on a basis of reasonable prosperity with little war emergency shipping; it appears reasonable to expect an annual volume of foreign trade in the early 1960s of approximately 230 million tons annually, of which approximately 145 million tons would be imports and approximately 85 million tons would be exports.

It will be noted from the previous table that the volume of coastwise shipping has remained fairly stable since 1950, following a sharp increase in 1948, and a sharp decrease in 1949. In 1955, coastwise volume was approximately 5% above the volume in 1954. There is no reason to expect any major decline in this movement during the early 1960s; and the inauguration of trailership service on many coastwise routes can reasonably be expected to tap a new market which will result in increased volume. Consequently, a forecast of 225 million tons of coastwise shipping annually has been adopted for the 1960-1965 period.

When the estimates for foreign and coastwise shipping in the 1960-1965 period are combined, the resulting estimate of deep-water shipping totals 455 million tons a year, about 2-1/2% below the volume which actually moved in 1955; about 29% above that which actually moved in 1950; and about 85% above that which actually moved in 1940. The prospect is for a continuing flow of deep-water commerce at volume levels approximating those reported in 1955. Consequently, the problem of the North Carolina ports is less one of capturing newly-generated traffic than of recovering existing deep-water traffic now diverted to other ports, so that the North Carolina ports may enjoy a deep-water commerce commensurate with the traffic generating power of their trade area.

Trends and Prospects in the Deep-Water Commerce of the Hampton Roads and Major South Atlantic Ports

To present a clear picture of the relationship between the deep-water commerce at the North Carolina Ports and such commerce at other ports serving the same region, it is necessary to add the Hampton Roads Ports of Newport News and Norfolk to the ports from Morehead City to Miami which are usually considered the South Atlantic Ports. This is because the data already evaluated make clear that much of the deep-water trade generated by North Carolina is moving through one of the Hampton Roads ports rather than through ports in North Carolina.

The ports serving the region of which North Carolina is a part, extend, therefore, from Newport News and Norfolk on the north, to Miami on the south. This group includes the Hampton Roads ports of Newport News and Norfolk, the North Carolina ports of Morehead City and Wilmington, the South Carolina ports of Charleston and Georgetown, the Georgia ports of Brunswick and Savannah, and the Florida ports of Fernandina, Jacksonville, Fort Pierce, Palm Beach, Port Everglades and Miami.

To form a judgment on the prospective deep-water commerce available to these regional ports as a group, the sum of their deep-water tonnage was related to national totals for import trade, export trade and coastwise trade; and an estimate made of the probable volume of trade in each of these categories through these ports as a group for the 1960-65 period.

With respect to import trade, the volume through the Hampton Roads and South Atlantic Ports as a group increased steadily from 1946 through 1952, except for a decline in 1949; then dropped back very slightly in 1954; and increased sharply, by almost 48%, between 1954 and 1955, the volume in the latter year being greater than in any other year since World War II.

Percentagewise in relation to national totals, the share of the Hampton Roads and South Atlantic Ports declined steadily from a high of 8.64% in 1946 to a low

of 5.24% in 1949; then increased very sharply in 1950, 1951 and 1952; followed by a drop in 1953 and 1954; and then returned in 1955 to a share of national import trade higher than in any year since 1947. The data are as follows:

Import Trade of the Hampton Roads and South Atlantic Ports
In Relation to National Totals

(millions of short tons)

		Hampton Roads and South Atlantic Ports	
Year	United States	Amount	% of U. S.
1946	52.1	4.5	8.64
1947	62.2	4.6	7.40
1948	72.3	4.8	6.64
1949	82.0	4.3	5.24
1950	102.0	5.9	5.78
1951	108.7	7.3	6.72
1952	116.0	7.9	6.81
1953	128.0	7.5	5.86
1954	129.4	7.3	5.64
1955	153.0	10.8	7.06
1960-65 (est.)	145.0	9.1	6.25

Since the last war year, the Hampton Roads and South Atlantic ports share of national import tonnage has ranged from a low of 5.24% in 1949, to a high of 7.40% in 1947, with 7.06% in 1955. In the light of the sustained volume and share of the national total of import trade for which these ports have accounted, it does not appear likely that there will be any radical change in their share of national totals in the next five to ten years. It would appear from the record that this share might reasonably be expected to average somewhere between 6% and 6.25%. For planning purposes, the latter percentage has been used to establish the estimated average volume of import trade through the Hampton Roads and South Atlantic Ports during the 1960-65 period.

Export trade through the Hampton Roads and South Atlantic ports has shown quite a different picture, varying widely both in volume and in its share of

national totals. Over the past ten-year period, the share of this group of ports in national export trade has ranged from a low of 5.51% in 1950 to a high of 28.45% in 1955. The data are as follows:

Export Trade of the Hampton Roads and South Atlantic Ports In Relation to National Totals

(millions of short tons)

		Hampton Roads and South Atlantic Ports	
Year	United States	Amount	% of U. S.
1946	96.8	8.9	9.19
1947	126.1	23.7	18.79
1948	90.7	15.8	17.42
1949	83.4	12.0	14.39
1950	67.2	3.7	5.51
1951	123.3	31.5	25.55
1952	111.4	24.7	22.17
1953	89.4	14.4	16.11
1954	84.4	17.0	20.14
1955	118.1	33.6	28.45
1960-65 (est.)	85.0	19.1	22.47

The wide fluctuations in export trade through this group of ports stems in large measure from the wide fluctuations in the export of coal and grain through the Hampton Roads ports. Account has to be taken of this factor in arriving at any judgment as to the probable share of this group of ports in total export trade during the 1960-1965 period. A reasonable range, on the basis of past indications, would be somewhere between 20% and 25% of national totals for the Hampton Roads and South Atlantic Ports. For purposes of estimating the export traffic likely to be available through these ports in the 1960-1965 period, a factor of 22.5% has been used. This would mean an export volume of about 19,100,000 tons per year during the 1960-1965 period.

In coastwise trade, which also includes inter-coastal trade and trade between the Continental United States and its territories and Puerto Rico, the Hampton

Roads and South Atlantic Ports together have had a much steadier volume of business, and a much more consistent share of the national total. After a post-war increase from 1946 to 1948, coastwise trade in these ports fell rather sharply in 1949, but then returned to a level in 1950 from which the volume has varied very little, the 1955 volume being less than 2% higher than the 1950 volume. The data are as follows:

Coastwise Trade of the Hampton Roads and South Atlantic Ports
In Relation to National Totals

(millions of short tons)

Year	United States	Hampton Roads and South Atlantic Ports Amount	% of U. S.
1946	137.6	20.2	14.68
1947	153.1	26.3	17.18
1948	174.1	31.0	17.81
1949	161.4	23.0	14.25
1950	182.5	26.5	14.52
1951	186.8	28.3	15.15
1952	184.2	26.4	14.33
1953	188.8	26.0	13.77
1954	187.2	24.3	12.98
1955	195.7	26.7	13.64
1960-65 (est.)	225.0	31.5	14.00

The share of the Hampton Roads and South Atlantic Ports in the national total of coastwise trade has ranged from a low of 12.98% in 1954 to a high of 17.81% in 1948, with 13.64% in 1955. In view of the fact that the Hampton Roads and South Atlantic Ports appear likely to benefit as much as any group of ports from the prospective development of trailership service, there is little reason to expect any radical change in the share of these ports in total coastwise traffic. It appears, therefore, that these ports may reasonably expect, in total, to account for about 14% of national coastwise trade in the 1960-65 period. This

would mean annual coastwise volume of about 31,500,000 tons.

When the estimated annual tonnage for the various classes of deep-water trade through the Hampton Roads and South Atlantic ports during the 1960-65 period are combined, it is found that their share of national foreign and coastwise trade during that period is expected to be just a little under the average for the past five years. The data are as follows:

Actual and Estimated Foreign and Coastwise Trade of Hampton Roads and South Atlantic Ports in Relation to National Totals

(millions of short tons)

Year	United States	Hampton Roads and South Atlantic Ports Imports	Exports	Coastwise	Total	% of U. S.
1946	286.5	4.5	8.9	20.2	33.6	11.73
1947	341.4	4.6	23.7	26.3	54.6	15.99
1948	337.1	4.8	15.8	31.0	51.6	15.31
1949	326.8	4.3	12.0	23.0	39.3	12.03
1950	351.8	5.9	3.7	26.5	36.1	10.26
1951	418.8	7.3	31.5	28.3	67.1	16.02
1952	411.5	7.9	24.7	26.4	59.0	14.34
1953	406.2	7.5	14.4	26.0	47.9	11.79
1954	401.1	7.3	17.0	24.3	48.6	12.12
1955	466.8	10.8	33.6	26.7	71.1	15.23
1960-65 (est.)	455.0	9.1	19.1	31.5	59.7	13.12

Trends and Prospects in the Deep-Water Commerce of the North Carolina Ports

During the past ten years, the deep-water commerce of the North Carolina ports has amounted to as little as 3.88% of the deep-water commerce of the Hampton Roads and South Atlantic Ports (1947), and to as much as 9% (1950). In 1955, it amounted to 5.21%, the lowest share for which the North Carolina ports had accounted since 1948. The data are as follows:

Actual and Estimated Foreign and Coastwise Trade of the North Carolina Ports In Relation to Totals for the Hampton Roads and South Atlantic Ports

(thousands of short tons)

		North Carolina Ports				
					Total	
Year	Hampton Roads and South Atlantic Ports	Imports	Exports	Coastwise	Amount	% of Hampton Roads & South Atlantic Ports
1946	33,654.8	73.3	53.8	1,745.2	1,872.3	5.56
1947	54,696.0	91.7	18.1	2,009.8	2,119.6	3.88
1948	51,593.9	173.8	34.8	2,152.3	2,360.9	4.58
1949	39,301.7	131.9	27.8	2,212.9	2,372.6	6.04
1950	36,098.7	310.2	21.1	2,918.1	3,249.4	9.00
1951	67,069.2	331.8	31.5	3,227.0	3,590.3	5.35
1952	59,040.2	375.4	7.4	2,805.8	3,188.6	5.40
1953	47,933.9	333.7	25.0	2,901.8	3,265.5	6.81
1954	48,576.9	421.7	34.8	2,694.4	3,200.9	6.59
1955	71,049.3	483.2	217.1	3,001.2	3,701.5	5.21
1960-65 (est.)	59,700.0	1,000.0	400.0	3,500.0	4,900.0	8.21

It has been pointed out previously that the share of the North Carolina ports in the deep-water commerce of the Hampton Roads and South Atlantic Ports is not commensurate with the economic importance and the traffic-generating power of North Carolina. This is further indicated by a comparison of the share of each of the South Atlantic Coastal States and Virginia in the total population of the South Atlantic Coastal States and Virginia, in their total value added by manufacture, in their total value of agricultural products sold, and in their total deep-water tonnage. These data are as follows:

	Percent of 5-State Totals			
State	Population (1950)	Value Added (1953)	Value of Agric. Prods.Sold(1950)	Deep-Water Tonnage-1954
Florida	17.6	0.6	18.9	16.9
Georgia	21.9	21.5	20.9	7.2
North Carolina	25.9	31.6	31.0	6.6
South Carolina	13.5	14.7	11.9	6.6
Virginia	21.1	22.6	17.3	62.7

It will be noted from the above tabulation that Florida's share of the deep-water tonnage of the Hampton Roads and South Atlantic ports is about the same as its share of the three economic factors; that Georgia's share of the tonnage is approximately 1/3 what it might expect on the basis of economic factors; that South Carolina's share is about 1/2 what it might expect on the basis of economic factors; that Virginia's share is perhaps three times what it might expect on the basis of economic factors; while North Carolina's share is only 1/5 to 1/4 of what it might expect on the basis of economic factors.

These data simply confirm again the fact that North Carolina's available deep-water tonnage is not moving in any substantial volume through its own ports. Typically, tonnage will use the nearest and most convenient port at which adequate services and facilities are available. This reflects the fact that over the long run inland transportation costs will be less to or from the nearest port; and that, as a result, tonnage will seek the nearest port to its inland origin or destination, other factors being equal. It can only be concluded that in the case of the North Carolina ports today, other factors are not equal. And that, as a result, North Carolina tonnage inbound and outbound, coastwise and foreign, is moving through more distant ports with higher inland transportation costs to North Carolina shippers and receivers than would be required if adequate facilities and services were available at the State's own ports.

From the standpoint of the State's economy, it is important, therefore, to arrive at a reasonable determination as to the deep-water tonnage which is available to adequate services and facilities at the State's ports, and to gear the State's program of further port development to the accommodation of such a volume of tonnage.

It must be recognized, of course, that changes in port patterns and inland routing patterns do not come about overnight. Far more shippers and receivers

of deep-water freight are motivated in their routings by tradition, friendship and lethargy, than by a continuing attention to the most economical routings. Even shippers and receivers who recognize the inherent economy in the use of North Carolina ports will find it difficult to route freight through them in the absence of a wider variety and a greater frequency in shipping services, and possibly in the absence of additional physical installations. It is important, therefore, in setting a goal for the next six years to recognize that the total available traffic can be developed only over a much longer period of time. The problem, therefore, is to set a short-range goal for needed immediate physical development in line with volume reasonably attainable over the next six years, and a long-range goal geared to ultimate requirements whose immediate use would be only as a guide to land acquisition and reservation against future needs.

To this end, reference is again made to the tabulation above showing each South Atlantic Coastal State's share of their total population, value added by manufacture, and value of agricultural products sold. Each of these factors is directly related to the generation of export and import trade. Population reflects the relative importance of the states in terms of consumer demand for imported foodstuffs and other consumers goods moving in foreign and coastwise trade. The value added by manufacture reflects the relative importance of the states in terms of demand for water-borne materials and supplies for industry, and also in terms of production of manufactured goods for export. The value of agricultural products sold reflects both the relative demand of agriculture in the various states for imported fertilizer material, and the relative supply of agricultural products moving into foreign trade, including in the case of the State of North Carolina a very substantial volume of unmanufactured tobacco.

A review of this tabulation brings out that among Virginia and the South Atlantic Coastal States, North Carolina accounts for 25.9% of the population, 31.6% of the value added by manufacture, and 31.0% of the value of agricultural products sold. Against this, it accounted in 1954 for only 6.6% of the deep-water tonnage. Given adequate port facilities and services, it would be reasonable to expect, over the long run, to find North Carolina accounting for somewhere between 20% and 30% of the deep-water trade of Virginia and of the South Atlantic Coastal States. For planning purposes, it would not be unreasonable to use 25% as a basis for long-range planning, including near-term acquisition of land for ultimate development.

From the standpoint of a short-term program such as the 6-year development program here under consideration, a more modest basis must be adopted in order to be realistic. Somewhere in the range of 10% to 15% of the deep-water trade of the South Atlantic and Hampton Roads ports would seem to be about the reasonable basis for a strong program over the next six years. For planning purposes, therefore, a 12.5% participation in this trade for the North Carolina ports has been used as the determinant of space and facility requirements.

This estimating factor has to be applied separately to prospective import trade, prospective export trade, and prospective coastwise trade. This is because it is essential to exclude from the bases against which it is applied any major increment of trade not reasonably available to the North Carolina ports. The coal movement through Norfolk and Newport News is one example. To the extent that such elements are found in the forward estimates for either import, export or coastwise trade, they will need to be eliminated before application of the estimating factor in order to arrive at an estimate of traffic actually available to the North Carolina ports.

With respect to import trade, the North Carolina ports have shown a more than five-fold increase in volume since 1947, with their share of the Hampton Roads and South Atlantic ports import tonnage increasing from 1.98% in 1947 to 4.47% in 1955. This percentage has varied within a relatively narrow range over the past six years, with a low of 4.47% in 1955 and a high of 5.78% in 1954. The data are as follows:

Import Trade of the North Carolina Ports

In Relation to Hampton Roads and South Atlantic Ports

(thousands of short tons)

Year	Hampton Roads and South Atlantic Ports	North Carolina Ports Amount	North Carolina Ports % of Hampton Roads and South Atlantic Ports
1946	4,519.5	73.3	1.62
1947	4,628.1	91.7	1.98
1948	4,815.5	173.8	3.61
1949	4,253.3	131.9	3.10
1950	5,931.0	310.2	5.23
1951	7,324.6	331.8	4.53
1952	7,920.8	375.4	4.74
1953	7,471.1	338.7	4.53
1954	7,297.6	421.7	5.78
1955	10,818.2	483.2	4.47
1960-65 (est.)	9,100.0	1,000.0	11.00

It will be remembered that the annual deep-water import tonnage estimated for the Hampton Roads and South Atlantic ports during the 1960-1965 period was 9,100,000 tons. Before application of the 12.5% estimating factor for the North Carolina ports, a review was made to determine the extent to which this estimated total might include increments of trade not reasonably available to the North Carolina ports. For this purpose the composition of trade at each of the major Hampton Roads and South Atlantic ports was reviewed for the four year period 1952-1955, inclusive. Tabulations of this type are given for Charleston,

Newport News and Norfolk in Exhibits 16-18 inclusive, which appear on Pages 75 to 77 , inclusive. On the basis of this analysis, it was determined that a reasonable average annual import volume for the years 1960-1965 against which to apply the estimating factor for the North Carolina ports would be 8,000,000 tons, thus giving estimated available annual imports for the North Carolina ports in the 1960-1965 period of 1,000,000 tons as shown in the tabulation above.

Export trade has moved through the North Carolina ports in much lower volume than import trade, ranging from a low of 7,400 tons in 1953 to a high of 217,000 tons in 1955. While the 1955 export volume at North Carolina ports was more than 2-1/2 times the 1954 volume, and this, in turn, was more than 3 times the 1953 volume, these recent increases reflect almost entirely the recent increases in the export of scrap iron through Wilmington. Even with these increases, the share of the North Carolina ports in the export tonnage of the Hampton Roads and South Atlantic ports amounted in 1955 to only 0.65%. The data are as follows:

Export Trade of the North Carolina Ports

In Relation to Hampton Roads and South Atlantic Ports

(thousands of short tons)

Year	Hampton Roads and South Atlantic Ports	North Carolina Ports Amount	North Carolina Ports % of Hampton Roads and South Atlantic Ports
1946	8,947.4	53.8	0.60
1947	23,721.1	18.1	0.08
1948	15,751.7	34.8	0.22
1949	12,003.7	27.8	0.23
1950	3,650.9	21.1	0.58
1951	31,470.9	31.5	0.10
1952	24,672.8	7.4	0.03
1953	14,423.9	25.0	0.17
1954	16,973.3	34.8	0.50
1955	33,568.4	217.1	0.65
1960-65(est.)	19,100.0	400.0	2.09

It will be remembered that the annual deep-water export tonnage estimated for the Hampton Roads and South Atlantic ports in the 1960-65 period was 19,100,000 tons. Here, again, before application of the 12.5% estimating factor for the North Carolina ports, a review was made to determine the extent to which this estimated volume might include increments not reasonably available to the North Carolina ports. Adjustment of this base for the heavy volume of coal exports through Newport News and Norfolk, and for the heavy volume of grain exports through Norfolk, gives an estimating base of approximately 3,200,000 tons against which to apply the 12.5% estimating factor. This gives an estimated annual export volume at the North Carolina ports in the 1960-65 period of 400,000 tons.

With respect to coastwise trade at the North Carolina ports, there has been a steady increase in annual volume from 1946 through 1951, followed by variations within a relatively narrow range corresponding roughly to changes in the total volume reported by the Hampton Roads and South Atlantic ports as a group. Relative to the coastwise trade for the group as a whole, the share of the North Carolina ports has ranged during the past 10 years from 6.94% in 1948 to 11.41% in 1951, with 11.26% in 1955. The data are as follows:

Coastwise Trade of the North Carolina Ports
In Relation to Hampton Roads and South Atlantic Ports
(thousands of short tons)

Year	Hampton Roads and South Atlantic Ports	North Carolina Ports Amount	 % of Hampton Roads and South Atlantic Ports
1946	20,188.9	1,745.2	8.64
1947	26,346.8	2,009.8	7.63
1948	31,026.7	2,152.3	6.94
1949	23,044.7	2,212.9	9.60
1950	26,516.8	2,918.1	11.00
1951	28,273.7	3,227.0	11.41
1952	26,446.6	2,805.8	10.61
1953	26,038.9	2,901.8	11.14
1954	24,306.0	2,694.4	11.09
1955	26,662.7	3,001.2	11.26
1960-65(est.)	31,500.0	3,500.0	11.10

It will be remembered that the estimated total coastwise tonnage for the Hampton Roads and South Atlantic ports as a group during the 1960-1965 period was 31,500,000 tons. A review of the composition of trade at the major North Atlantic ports during the past four years indicates that a fair basis for application of the 12.5% estimating factor for the North Carolina ports would be 24,000,000 tons. This would give an estimated annual coastwise trade at the North Carolina ports in the 1960-1965 period of 3,000,000 tons, approximately the same volume as in 1955. Since this volume was exceeded in both 1951 and 1955, it would be wise to allow a margin above the estimate to reflect the apparent above-average generating power of the North Carolina ports for coastwise traffic. Consequently, an estimate of 3,500,000 tons has been used in the above tabulation for the available coastwise trade at the North Carolina ports in the 1960-1965 period.

In summary, the estimated deep-water tonnage adopted for planning purposes for the period 1960-1965 at the North Carolina ports is as follows:

Imports	1,000,000 tons
Exports	400,000 tons
Coastwise	3,500,000 tons
Total	4,900,000 tons

The prospective distribution of these estimated deep-water tonnages as between the North Carolina port locations will be discussed in the next chapter.

Exhibit 16
Page 1 of 1

Composition of Deep-Water Trade at Charleston

1952 - 1955

(short tons)

			BULK CARGO										Total Bulk	
Year and Item (1)	Total (2)	General Cargo (3)	Grain (4)	Soybeans (5)	Coal (6)	Petroleum Products (7)	Molasses etc. (8)	Gypsum Sulphur (9)	Ores (10)	Scrap Iron (11)	Fertilizer Materials (12)	Coal Tar Products (13)	Amount (14)	Percent (15)
1955														
Imports	1,333,013	217,549	..	..	..	924,544	22	..	75,081	..	114,782	1,035	1,115,464	83.7
Exports	413,456	260,534	..	..	..	..	116	..	..	139,682	13,124	..	152,922	37.0
Coastwise receipts	1,997,579	112,974	..	..	..	1,816,542	..	45,621	..	..	11,700	10,742	1,884,605	94.3
Coastwise shipments	157,003	28,646	..	..	..	123,348	21	..	..	..	4,988	..	128,357	81.8
Total	3,901,051	619,703	..	..	..	2,864,434	159	45,621	75,081	139,682	144,594	11,777	3,281,348	84.1
1954														
Imports	1,112,331	207,553	..	..	..	729,160	17	..	46,072	..	125,682	3,847	904,778	81.3
Exports	239,926	175,202	..	..	..	..	79	..	..	46,832	17,813	..	64,724	27.0
Coastwise receipts	1,545,940	38,493	..	..	..	1,460,838	..	32,273	..	..	5,832	8,504	1,507,447	97.5
Coastwise shipments	151,823	24,463	..	..	..	114,526	92	..	..	..	12,742	..	127,360	83.9
Total	3,050,020	445,711	..	..	..	2,304,524	188	32,273	46,072	46,832	162,069	12,351	2,604,309	85.4
1953														
Imports	1,309,174	204,172	..	..	..	817,274	..	..	107,299	..	166,286	14,143	1,105,002	84.4
Exports	177,412	164,763	..	..	..	..	110	..	..	50	12,489	..	12,649	7.1
Coastwise receipts	1,991,496	98,919	..	..	..	1,817,346	..	58,152	5,712	..	8,195	3,172	1,892,577	95.0
Coastwise shipments	123,247	20,167	..	..	..	88,273	56	..	..	..	14,751	..	103,080	83.6
Total	3,601,329	488,021	..	..	..	2,722,893	166	58,152	113,011	50	201,721	17,315	3,113,308	86.4
1952														
Imports	1,249,256	169,184	..	..	..	811,011	..	..	92,033	..	165,805	11,223	1,080,072	86.5
Exports	490,742	124,698	..	..	344,350	..	241	..	..	..	21,453	..	366,044	74.6
Coastwise receipts	1,878,948	81,989	..	..	..	1,727,908	..	60,157	..	..	5,710	3,184	1,796,959	95.6
Coastwise shipments	135,565	28,124	..	..	..	93,539	34	..	..	..	13,585	283	107,441	79.3
Total	3,754,511	403,995	..	..	344,350	2,632,458	275	60,157	92,033	..	206,553	14,690	3,350,516	89.2

Exhibit 17
Page 1 of 1

Composition of Deep-Water Trade at Newport News

1952 - 1955

(short tons)

			BULK CARGO											
													Total Bulk	
Year and Item (1)	Total (2)	General Cargo (3)	Bulk Grain (4)	Soybeans (5)	Coal (6)	Petroleum Products (7)	Molasses etc. (8)	Gypsum Sulphur (9)	Ores (10)	Scrap Iron (11)	Fertilizer Materials (12)	Coal Tar Products (13)	Amount (14)	Percent (15)
1955														
Imports	1,377,138	117,488	3	..	..	322,062	..	..	936,852	..	724	9	1,259,650	91.5
Exports	15,172,499	392,255	..	1,207	14,775,983	..	..	..	..	..	3,054	..	14,780,244	97.4
Coastwise receipts	49,706	..	..	..	..	49,706	..	..	..	..	..	..	49,706	100.0
Coastwise shipments	3,456,315	16,996	..	157	3,439,162	..	..	..	..	..	..	..	3,439,319	99.5
Total	20,055,658	526,739	3	1,364	18,215,145	371,768	..	..	936,852	..	3,778	9	19,528,919	97.4
1954														
Imports	518,363	63,408	..	..	..	..	..	..	454,405	..	550	..	454,955	87.8
Exports	6,672,383	250,769	840	1,893	6,393,058	..	..	..	10	1,904	23,909	..	6,421,614	96.2
Coastwise receipts	156	156	..	..	..	..	..	..	..	..	..	..	..	..
Coastwise shipments	3,411,056	1,015	..	..	3,410,041	..	..	..	..	..	..	..	3,410,041	100.0
Total	10,601,958	315,348	840	1,893	9,803,099	..	..	..	454,415	1,904	24,459	..	10,286,610	97.0
1953														
Imports	553,184	126,280	..	..	..	..	..	..	426,720	..	184	..	426,904	77.2
Exports	6,608,624	262,683	..	4,679	6,316,149	..	..	..	..	..	25,113	..	6,345,941	96.0
Coastwise receipts	5,592	..	..	..	..	..	..	..	5,592	..	..	..	5,592	100.0
Coastwise shipments	4,481,210	5,047	..	..	4,476,163	..	..	..	..	..	..	..	4,476,163	99.9
Total	11,648,610	394,010	..	4,679	10,792,312	..	..	..	432,312	..	25,297	..	11,254,600	96.6
1952														
Imports	321,191	81,744	..	..	..	..	..	..	238,781	..	333	333	239,447	74.5
Exports	12,006,767	221,527	285	2,241	11,782,574	1	140	..	..	..	..	..	11,785,241	98.2
Coastwise receipts	343	343	..	..	..	..	..	..	..	..	..	..	..	..
Coastwise shipments	4,634,740	3,884	..	..	4,630,856	..	..	..	..	..	..	..	4,630,856	99.9
Total	16,963,041	307,497	285	2,241	16,413,430	1	140	..	238,781	..	333	333	16,655,544	98.2

Exhibit 18
Page 1 of 1

Composition of Deep-Water Trade at Norfolk

1952 - 1955

(short tons)

			BULK CARGO											
Year and Item (1)	Total (2)	General Cargo (3)	Bulk Grain (4)	Soybeans (5)	Coal (6)	Petroleum Products (7)	Molasses etc. (8)	Gypsum Sulphur (9)	Ores (10)	Scrap Iron (11)	Fertilizer Materials (12)	Coal Tar Products (13)	Total Bulk Amount (14)	Total Bulk Percent (15)
1955														
Imports	3,050,252	379,394	..	..	..	1,875,062	22,481	480,348	117,137	..	167,043	8,787	2,670,858	87.6
Exports	16,288,960	384,938	882,396	239,622	14,653,470	21	402	15	..	106,761	21,335	..	15,904,022	97.6
Coastwise receipts	5,483,735	162,500	..	..	..	5,016,333	9,640	56,528	..	..	237,062	4,762	5,321,235	97.0
Coastwise shipments	4,580,489	76,154	..	1,096	4,491,220	11,591	5	..	27	..	396	..	4,504,335	98.3
Total	29,403,436	1,002,986	882,396	240,718	19,144,690	6,903,007	32,528	536,891	117,164	106,761	425,836	13,549	28,400,450	96.6
1954														
Imports	2,144,071	279,490	..	..	..	1,287,360	18,345	292,976	78,025	..	180,541	7,334	1,864,581	87.0
Exports	8,787,999	250,894	412,679	175,003	7,858,807	..	69	..	..	59,835	30,712	..	8,537,105	97.1
Coastwise receipts	4,936,861	117,307	..	..	..	4,544,715	7,417	46,143	..	2,000	206,975	12,304	4,819,554	97.6
Coastwise shipments	3,909,867	75,536	..	972	3,828,565	289	..	..	..	..	2,681	1,824	3,834,331	98.1
Total	19,778,798	723,227	412,679	175,975	11,687,372	5,832,364	25,831	339,119	78,025	61,835	420,909	21,462	19,055,571	96.3
1953														
Imports	2,320,378	320,324	..	..	..	1,244,315	24,235	306,597	161,219	..	249,320	14,368	2,000,054	86.2
Exports	6,880,581	272,441	403,291	122,367	6,081,864	..	31	..	..	293	294	..	6,608,140	96.0
Coastwise receipts	4,891,175	154,015	..	..	..	4,427,654	5,259	56,226	..	48	242,106	5,867	4,737,160	96.9
Coastwise shipments	4,344,219	69,567	..	842	4,273,463	286	11	..	..	..	50	..	4,274,652	98.4
Total	18,436,353	816,313	403,291	123,209	10,355,327	5,672,255	29,536	362,823	161,219	341	491,770	20,235	17,620,040	95.6
1952														
Imports	2,690,695	261,161	..	..	..	1,751,796	11,215	292,882	185,346	..	176,998	11,297	2,429,534	90.3
Exports	11,198,624	238,893	226,665	80,283	10,652,294	29	56	..	..	..	433	..	10,959,731	97.9
Coastwise receipts	4,994,637	178,702	..	..	..	4,497,669	4,931	38,175	..	..	270,400	4,760	4,815,935	96.4
Coastwise shipments	5,656,248	70,023	2,830	670	5,572,311	7,914	46	..	..	..	2,454	..	5,586,225	98.8
Total	24,540,204	748,750	229,495	80,953	16,224,605	6,257,408	16,248	331,057	185,346	..	450,285	16,057	23,791,454	96.9

VI. Prospective Deep-Water Commerce of Each State Port Location

The North Carolina State Port Authority has the statutory obligation as set forth in its Creative Act,

> "To develop and improve the harbors or seaports at Wilmington, Morehead City, and Southport, North Carolina, and such other places as they may deem feasible for the more expeditious and efficient handling of water-borne commerce from and to any part of the State of North Carolina and other states and foreign countries;"

Of the three coastal cities named specifically in this Act, marine terminal facilities have been acquired as well as constructed by the State Ports Authority at both Morehead City and Wilmington. Thus far, however, the Authority has not been active at Southport. One of the matters given careful consideration in connection with this study was whether the deep-water commerce estimated to be available to the North Carolina ports as a group in the 1960-65 period should reasonably be allocated to one, two or all three of these port locations. Only then can a proper allocation of available tonnage be made.

An examination of the experience in the State of Virginia and other South Atlantic Coastal States is helpful in considering this problem. The percentage distribution of deep-water commerce among the ports in each of these states in the year 1955 was as follows:

	Percentage Distribution of Deep-Water Tonnage				
	First Port or Group		Second Port or Group		All Other
State	Name	%	Name	%	%
Virginia	Hampton Roads	97.0	Lower Potomac	1.5	1.5
North Carolina	Wilmington	90.0	Morehead City	3.4	1.6
South Carolina	Charleston	97.1	Georgetown	2.9	0.0
Georgia	Savannah	99.9	Beaumont	0.1	0.0
Florida	Jacksonville	47.3	Pt. Everglades	30.4	22.3

Except for Florida with a longer coastline on the Atlantic than any two of the other states, 90% or more of the deep-water commerce concentrated in 1955 at a

single port or port group. The record argues that concentration of port development in a limited number of locations is the typical pattern in the coastal area of which North Carolina is a part. In the absence of other controlling factors, it should be concluded that the funds of the State of North Carolina would be better expended and its industry better assisted if there were a maximum degree of concentration in the development effort. To do otherwise would not appear feasible in the light of experience in other coastal states, and this is the primary test established by the Authority's Creative Act.

Were this study being undertaken prior to any port development by the Authority, the most searching analysis would be recommended prior to embarking at development effort at more than one port in the state. In view of the fact that substantial investment has already been made in two ports, it would not appear reasonable to argue for such a reinvestigation at this time. Accordingly, it is concluded that consideration must be given at least to Morehead City and to Wilmington from the standpoint of the prospective inter-port distribution of the deep-water tonnage considered available to North Carolina ports.

The matter of port development at Southport is one, however, which can be approached objectively, no state investment having been made in marine terminal facilities at this port. The existing facilities at the port and the character of its existing water-borne commerce have been discussed in Chapter III. In that discussion, no justification was found for expecting or seeking to induce the development of deep-water trade at Southport. One of the principal difficulties at Southport is the complete absence of any basic market for water-borne trade in the port city itself. With a 1950 population of only 1,748, it is located in a county which had a 1950 population of only 19,238, the 72nd county in population of a total of 100 in the State of North Carolina. For comparison, Carteret, the

county in which the Port of Morehead City is located, ranked 63rd among the 100 counties of the State, and New Hanover, the county in which the Port of Wilmington is located, ranked 18th in population among the 100 counties of the State. These rankings, compared with rankings with other significant economic indicators, are as follows:

	Rank Among 100 North Carolina Counties		
Items	Brunswick (Southport)	Carteret (Morehead City)	New Hanover (Wilmington)
Population - 1950	72	63	18
Population/square mile	96	75	4
Value Added by mfr.	56	64	25
Retail Sales	85	61	8
Wholesale Sales	85	45	6

On all of the above factors but one Brunswick County, which includes Southport, ranks lower than Carteret County, which includes Morehead City, and Carteret County, in turn, ranks very considerably lower than New Hanover County, which includes Wilmington. With only 8.4% of the State's deep-water commerce attracted to Morehead City even with a substantial investment by the State in modern marine terminal facilities, it is not considered that the development of marine terminal facilities at Southport for the accommodation of deep-water commerce would be feasible or desirable.

It has been pointed out that a substantial volume of traffic moves past Southport on the Atlantic Intracoastal Waterway which might well provide a basis for the development of the port for the accommodation of this type of traffic. In 1955, for example, the tonnage on the Intracoastal Waterway at North Carolina amounted to approximately 1,800,000 tons, of which approximately 1,500,000 tons was through traffic and approximately 300,000 tons originated or terminated within the State. There are two ways in which this traffic might be turned to the advantage of Southport:

1. If there be any substantial volume of such traffic originating or terminating in southern North Carolina or northern South Carolina which could be served more effectively through Southport than through ports now being used, there is a potential basis for consideration of terminal facilities for this type of traffic at Southport.

2. If there were an established terminal for Intracoastal Waterway traffic at Southport, it would enhance to some extent the community's appeal to new industry

While the investigation of available traffic in the present study covered only deep-water traffic, it is felt that it would be desirable to explore the volume of barge traffic which might be convenienced by a terminal at Southport. It is not considered, however, that there is sufficient prima facie indication that such traffic would be available to justify the recommendation of any facilities at Southport at the present time.

With substantial waterfront land available which could be served either by barge traffic or by deep-water vessels, it appears that Southport's greatest opportunity would lie in attracting water-based industry if it can offer the other requirements which various industries would need,- particularly reasonable supplies of industrial water. It would appear that Southport could progress more rapidly in the field of industrial development related to waterfront locations than in the field of common-carrier marine terminal development. Southport's appeal as an industrial location will be further strengthened if the McLean interests exercise their option on waterfront land and install a trailer-ferry terminal at Southport which would give direct water service on a coastwise basis to other South Atlantic ports and also to ports in the North Atlantic range.

In view of the facts developed as discussed above, it is the conclusion of this study that such deep-water tonnage as is estimated to be available to North Carolina ports in the 1960-65 period reasonably should be considered only for the existing deep-water ports of Morehead City and Wilmington.

The problem, therefore, is to arrive at a reasonable determination of the prospective distribution during the 1960-65 period of approximately 4,900,000 tons of deep-water cargo as between the ports of Morehead City and Wilmington. The actual deep-water tonnage handled by the two ports together in 1955 by type of trade, the estimated tonnage during the 1960-65 period, and the estimated increase are as follows:

	Tonnage Through Morehead City and Wilmington		
Deep-Water Trade	1955 (Actual)	1960-65 (Estimated)	Estimated Increase
Imports	483,200	1,000,000	516,800
Exports	217,100	400,000	182,900
Coastwise	3,001,200	3,500,000	498,800
Totals	3,701,500	4,900,000	1,198,500

The problem is not one simply of distributing the anticipated increase. This is because the composition of trade at each of the ports has been undergoing fairly substantial change during the past few years as shown in Exhibits 19 and 20 which appear on Pages 98 and 99. Consequently, the problem of distributing 1960-65 forecasted trade as between the ports involves judgements as to:

1. The extent to which existing volume in various commodities and commodity groups will be maintained.
2. The extent and nature of increased volume.

As a basis for these determinations, it is necessary to keep in mind the inland trade areas of the North Carolina State ports, and the inland transportation available to them.

The U. S. Highways serving the two ports are shown in Exhibit 21 which appears on Page 100. It will be noted from this exhibit that the Port of Wilmington is served by four U. S. interstate highways including both north and south service on U. S. Route 17, the coastal route between the North and Florida. This permits service to Wilmington as an en route stop in through truck service north

and south, as well as by originating and terminating trips to points throughout the North and South Carolinas and to the North and South. In this regard, Wilmington is situated more favorably than Morehead City which is east of the main north-south flow of truck traffic and is served by only one U. S. route.

Wilmington is also in a somewhat more advantageous position from the standpoint of rail service than the port of Morehead City, being served directly by two trunkline railroads (Atlantic Coastline and Seaboard Airline) whereas Morehead City is served at present only by one short-line railroad (Atlantic and East Carolina), as shown in Exhibit 22 which appears on Page 101. There is, of course, no reason why the short-line railroad cannot provide adequate servide to Morehead City, but field investigation disclosed that there is serious question as to the adequacy of existing yards to support a heavy movement of freight through this port. A proposal by the Southern Railway Company to take over the Atlantic and East Carolina is now before the Interstate Commerce Commission. Favorable action on this proposal would bring trunkline rail service and the resources of a trunkline railroad directly to Morehead City, which could be expected to be of considerable advantage both from the standpoint of the provision of needed facilities, and also from the standpoint of port commerce promotion.

Obviously, the prospective increases in deep-water tonnage at the North Carolina ports are not going to originate and terminate primarily in the port cities. The availability of the rail and highway connections discussed above will be an important element in stimulating total trade and also an element in the distribution of the increased trade as between the ports. In this connection, however, the inland rate structure, in the final analysis, will be controlling. To that end, careful consideration has been given to the inland trade territories available on the basis of inland rates to the North Carolina ports. The inland

trade territory of the State ports is divided as between:

1. Trade territory which is immediately adjacent to the State ports in North Carolina and the adjoining four states, in which inland import and export rates, both by rail and by truck, are lower than or equal to those applicable at competitive ports.

2. A large segment of territory in the mid-west extending roughly from Duluth, Minnesota south almost to Topeka, Kansas; thence east and south to St. Louis, Missouri and Louisville, Kentucky; thence north and west to Chicago, Illinois, Green Bay, Wisconsin and Duluth, in which inland import and export rates by rail are generally equal to or lower than those applicable at competitive ports.

With respect to the adjacent territory, Morehead City controls a portion in the northeastern part of the State, while Wilmington controls a much larger portion extending to the northern, eastern and southern boundaries of the State, and is competitive with other ports in areas in four adjoining states.

With respect to the mid-western territory, both Morehead City and Wilmington, along with other South Atlantic ports, enjoy a competitive position with North Atlantic ports and with Gulf ports.

These trade territories, based on class 100 Import and Export rates, are shown in Exhibits 23 and 24 which appear on Pages 102 and 103.

These trade territories and their effect on the future water-borne commerce of each of the State Ports will be discussed seriatim.

Midwestern Trade Territory for the State Ports.

There is a large section in the Midwest comprising all or part of ten states in which Morehead City and Wilmington, along with other South Atlantic ports, enjoy a competitive position with North Atlantic and Gulf ports. These states are located in Western Trunkline and Official Territory, and existing port differentials between the two territories and the North Atlantic, South Atlantic and Gulf ports have been in existence for many years.

The degree of competitive advantage of Morehead City and Wilmington in this territory varies. There are seven sub-areas within the outer perimeter, several of which include only one or two important cities within a state, and port relationships in each sub-area differs. These sub-areas, as parts of the State ports' Midwestern Trade Territory, are also shown in Exhibit 24 which appears on Page 103, together with a description of the rate status in each sub-area. In every sub-area Morehead City and Wilmington have a rate advantage over the North Atlantic ports of Boston, New York and Philadelphia, and in several sub-areas they have a rate advantage over the North Atlantic ports of Baltimore and Norfolk. But where such advantages are held, Morehead City and Wilmington are always equaled by other South Atlantic ports, by the North Atlantic ports of Baltimore and Norfolk and/or by the Gulf ports.

The net result of this three-way determination of rates between the Seaboard ports and the Midwest territory described above is that the State ports never enjoy more than equality with some other competitive group of ports. In almost every instance one or more ports in each group has more frequent and more extensive world port steamship service making it difficult for the State ports effectively to solicit trade from the areas and to capitalize on rate equality. The various categories of traffic from and/or to the various sub-areas on which applicable rates are equal as between Morehead City, Wilmington and another group of competitive ports may be summarized as follows:

Sub-Area No. 1:	Import and export traffic originating from or destined to countries other than countries in Europe, Africa or the East Coast of South America.
Sub-Area No. 2:	Import traffic, only, originating from countries other than countries in Europe, Africa or the East Coast of South America.

Sub-Area No. 3: Export traffic, only, destined to countries other than countries in Europe, Africa and the East Coast of South America.

Sub-Area No. 4: Import and export traffic originating from or destined to all countries of the world.

Sub-Area No. 5: Import traffic, only, originating from all countries of the world.

Sub-Area No. 6: Import and export traffic originating from or destined to countries in Europe, Africa, and the East Coast of South America.

Sub-Area No. 7: Export traffic, only, destined to countries in Europe, Africa and the East Coast of South America.

The value of this Midwestern Trade Territory to the State ports as a generator of port traffic either now or in the foreseeable future appears very limited. This is because:

1. The rate structure between the territory and the State ports varies throughout the territory to such a degree as to limit solicitation on a broad basis.

2. With no liner service available at Morehead City, and only limited liner service available at Wilmington, the State ports would be hard pressed to compete with any other group of ports on a basis of equal inland rates.

3. Inland rail rates between most of the territory and such Great Lakes ports as Chicago, Milwaukee, Detroit, Toledo and Cleveland, which were not considered at all in the comparison of rates from and to seaboard ports, are lower than import and export rates applicable from and to any group of seaboard ports. These rates, even in combination with somewhat higher ocean rates than those applicable from seaboard ports, are now attracting shippers in Ohio, Indiana, Illinois, Wisconsin, and other Midwestern States to the import and export of goods through the present limited canal system of the St. Lawrence River.

4. The activation in 1959 of the St. Lawrence Seaway will have the effect of opening the Great Lakes ports to world-wide shipping in large, fast ocean-going vessels. At that time large foreign-flag vessels will replace the present small vessels now operating in foreign trade into the Lakes and it is expected that American Flag vessels will also enter this trade under subsidy. In fact, on February 9, 1956, the United States Department of Commerce announced the designation of U.S. Foreign Trade Route No. 32 described as being "between United States ports on the Great Lakes and St. Lawrence

River and ports in the United Kingdom (Republic of), Ireland, Atlantic Europe (Germany to the northern border of Portugal) and Baltic-Scandinavian ports". It was stated at that time that "studies are being continued, and it is expected at a later date, when the importance of other routes such as Great Lakes to the Mediterranean, West Coast of Africa, and the Caribbean have been analyzed and determined, that consideration will be given to the possible designation of such trade routes as 'essential'". With the extension of shipping into the Great Lakes toward a world-wide basis, it is believed reasonable that ocean shipping rates will be reduced toward the level of existing shipping rates applicable at Atlantic Coast and Gulf ports. Assuming that these ocean rates may eventually be equalized, it follows that most of this Midwestern territory would be lost even on a domestic scale of rates based on mileage.

5. It is to be expected that as the Great Lakes increase in importance with the opening of the Seaway, the railroads will publish import-export rates to the various Lake Ports which will tend to expand their trade territories to the further detriment of the Atlantic and Gulf seaboard ports.

6. Finally, action currently being taken by the northeastern railroads to "equalize" rates to and from the Atlantic coast port of New York and ports north thereof with those of Baltimore and Norfolk would, if approved by the I.C.C., reduce rates between New York and a number of Midwestern states in some cases to the level of rates existing between Morehead City and Wilmington and those states. Involved are all points in the North Carolina State Ports Midwestern Trade Territory in Indiana and to a limited degree, points in Illinois and Wisconsin. Tariffs have actually been filed by the northeastern railroads placing New York on a parity with the Baltimore group of ports. The railroads serving the Baltimore group countered by filing rate reductions to maintain the difference. Concurrently, Trunkline and New England Territory railroads filed Fourth Section Application No. 32204 with the Commission asking relief.

   Following protests by a number of railroads and port organizations serving the East Coast, the Commission's Board of Suspensions by an order in I and S No. 6615, "Equalization of Rates at North Atlantic Ports", suspended operation of the protested schedules until February 9, 1957. On October 19, 1956 the Commission issued an order assigning both cases (I and S No. 6615 and Fourth Section Application No. 32,204, Import and Export Rates from North Atlantic Ports) for hearing February 18, 1957, with a further hearing April 16, 1957. Should the Commission eventually permit the equalization here under consideration, the South Atlantic Ports advantage in a part of the Midwest would suffer by the increased competition.

7. Finally, analysis of the inland origins and destinations of freight being handled through the State ports confirms that the bulk of present traffic is moving to or from adjacent trade territory rather than to or from Midwestern territory.

Under these circumstances it is felt that the North Carolina State ports can expect their major near-term increases to be in tonnage moving to and from their adjacent Inland Trade Territory. Full realization of the tonnage potential existing in this territory, largely confined to the State of North Carolina, will bring with it the steamship service which will, in turn, naturally attract some trade from the various areas in the Midwestern Trade Territory. The measure of success of the State Ports Authority during the next few years in attracting additional tonnage both from within and outside the State, and in securing much more extensive steamship service into the State ports, would indicate whether or not an intensive effort in the Midwestern Trade Territory were justified to hold traffic already acquired and to secure additional traffic. This effort would be directed to holding and securing year-around traffic from areas most susceptible of advantageous shipment through the State ports, and to holding and securing traffic from the more distant areas for shipment during the winter months when, for approximately five months, the Seaway route would be closed by ice conditions.

Adjacent Inland Trade Territory for Morehead City

The total adjacent inland trade territory for Morehead City is located in the northeastern portion of the State of North Carolina. It consists of a total of 21 counties in the State. A breakdown of these 21 counties as between those in which Morehead City has the best inland rates and those in which it is competitive is as follows:

Morehead City Trade Territory

Total No. of Counties	Exclusive Counties	Competitive Counties
21	9	12

From or to points in all or a major part of each of the nine counties designated as exclusive territory, the Port enjoys inland Class 100 rail and/or truck rates which are lower than those in effect between those points and any other port. These nine counties are:

Beaufort
Carteret
Craven
Durham
Greene
Jones
Lenoir
Pamlico
Pitt

From or to points in all or a major part of each of the twelve counties designated as competitive the following rate structures prevail:

1. In seven of the twelve counties, the Port of Morehead City enjoys rates lower than those from and to Wilmington, but equaled by those from and to Norfolk. These counties are:

   Dare
   Edgecombe
   Hyde
   Martin
   Nash
   Tyrrell
   Washington

2. In four of the twelve counties, the Port of Morehead City enjoys rates lower than those from and to Norfolk, but equaled by those from and to Wilmington. These counties in which Morehead City and Wilmington are competitive are:

   Alamance
   Orange
   Wake
   Wilson

3. In one of the twelve counties, the Port of Morehead City has rates equal with those from and to both Norfolk and Wilmington. This county is Person.

Adjacent Inland Trade Territory For Wilmington

The total adjacent inland trade territory for Wilmington consists of a total of sixty-nine counties in North Carolina and in its four bordering states. A breakdown of these counties by State is:

State	Number of Counties
Kentucky	3
North Carolina	50
South Carolina	9
Tennessee	4
Virginia	3
	69

The Port of Wilmington exclusive territory from and to which Wilmington enjoys rates lower than those from and to any other port constitutes the Port's greatest area of potential water-borne commerce. The exclusive territory includes all or part of each of the 45 of the 100 counties in North Carolina, and all or part of six counties in the adjoining State of South Carolina. These are:

North Carolina

Alexander
Anson
Avery
Bladen
Brunswick
Burke
Cabarrus
Caldwell
Catawba
Chatham
Columbus
Cumberland
Davidson
Davie
Duplin

Forsyth
Gaston
Guilford
Harnett
Hoke
Iredell
Johnston
Lee
Lincoln
Mecklenburg
Montgomery
Moore
New Hanover
Onslow
Pender

Randolph
Richmond
Robeson
Rockingham
Rowan
Sampson
Scotland
Stanly
Stokes
Surry
Union
Watauga
Wayne
Wilkes
Yadkin

South Carolina

Chesterfield
Dillon
Horry
Marion
Marlboro
York

In all or part of four other counties in North Carolina, rates from and to Morehead City and Wilmington are equal but are lower than those to another competitive port; and in part of a fifth county rates are equal to Morehead City, Norfolk and Wilmington. These counties are:

Almance	Wake
Orange	Wilson
Person*	

*Rates equal from and to Morehead City, Norfolk and Wilmington.

Rates from and to Wilmington, which are lower than those from and to Morehead City and equal with those applicable from and to other ports are in effect in the balance of Wilmington's adjacent inland trade territory. All or part of thirteen counties in four states are included in this territory. These counties are:

Kentucky	South Carolina
Floyd	Cherokee
Harlan	Darlington
Pike	Florence

Tennessee	Virginia
Carter	Henry
Sullivan	Scott
Unicor	Wise
Washington	

Comparative Resources of the Ports' Trade Territories

When the resources of the counties which comprise the exclusive and competitive territories of the two ports are compared, the following relationships are found to exist:

		Totals for Counties Characterized As		
Indicator	Unit	Morehead City Exclusive	Morehead City Equal to Wilmington	Wilmington Exclusive
Population - 1956	000	385	329	2,836
Mfg employees - 1954	no.	23,383	28,418	316,744
Value added - 1954	$000	203	147	1,575
Retail sales - 1954	$mil	302	284	2,119
Wholesale sales - 1954	$mil	325	389	3,064
Tobacco prod. - 1954	Mil lbs	154	66	441

As between Morehead City and Wilmington, the greater resources of the Wilmington trade area would normally be expected to generate more diverse and frequent service, and hence Wilmington can probably be expected to attract more

than its statistical portion of the trade. If it did only that, however, and the competitive markets were divided on the basis of the exclusive markets, the ranges within which to expect inter-port tonnage distributions would be about as follows:

Indicator	Unit	Morehead City Market Number	Morehead City Market %	Wilmington Market Number	Wilmington Market %
Population - 1956	000	424	12.0	3,125	88.0
Mfg employees - 1954	no.	25,331	6.9	343,214	93.1
Value added - 1954	$000	220	11.4	1,705	88.6
Retail sales - 1954	$ mil	337	12.5	2,368	87.5
Wholesale sales - 1954	$ mil	362	9.6	3,416	90.4
Tobacco prod. - 1954	Mil lbs	171	25.9	490	74.1

Actually, it is not reasonable to expect that in the case of Morehead City, the build-up of liner-steamship service, with regularly scheduled calls, will provide service to a sufficient number of trade areas with sufficient frequency to enable the Port to realize much over 5% or 6% of the combined Morehead City-Wilmington market. Tobacco is an exception, where the strength of the Morehead City market is sufficient to expect that it could realize its full statistical share of total shipments,- say 26% as against 74% for Wilmington.

With these basic tools established, consideration can now be given to the individual segments of trade in the 1960-65 period, and their probable distribution as between Morehead City and Wilmington.

Inter-Port Distribution of Imports

Import tonnage at the two ports together is expected to increase from approximately 483,000 tons in 1955 to an average of 1,000,000 tons annually in the 1960-65 period.

Conspicuous features of the import trade at Wilmington during the past four years have been a sharp increase in general cargo imports; a sharp increase in the

importation of petroleum products, with an increase from 5,000 tons in 1953 to 145,000 tons in 1955; and a sharp increase in the importation of molasses, an increase from 4,000 tons in 1953 to 34,000 tons in 1955.

At Morehead City during the past four years, the import trade has consisted almost entirely of petroleum products with 1,000 tons of general cargo imported in 1954, 10,000 tons of fertilizer materials imported in 1953, and approximately 1,500 tons of soy beans imported in 1955. Growth trends in import trade are far stronger at Wilmington than at Morehead City, and this confirms the finding above that, apart from specialized products, 90% to 95% of the trade of the North Carolina ports can reasonably be expected to prefer the use of the Port of Wilmington.

With these facts in hand, the forecasted total imports for the North Carolina ports in the 1960-65 period have been distributed as follows:

Morehead City	215,000 tons
Wilmington	785,000 tons
Total	1,000,000 tons

The distribution of these forecasted imports at each port by type, and the actual imports in each group for the past four years are as follows:

Actual and Prospective Imports

	Tonnage (thousands)				
Import Group and Port	1952	1953	1954	1955	1960-65
General cargo - total					
Morehead City	..	..	1	..	20
Wilmington	33	44	41	59	250
Bulk cargo - Pet. Prods.					
Morehead City	162	132	144	128	175
Wilmington	3	5	48	145	250
Bulk cargo - Molasses					
Morehead City	..	..	..	..	..
Wilmington	4	4	19	34	75
Bulk cargo - Fertilizer Mat.					
Morehead City	..	10	..	..	..
Wilmington	159	137	157	110	150
Bulk cargo - Coal Tar Prods.					
Morehead City	..	..	..	..	..
Wilmington	10	7	11	7	10

Import Group and Port	Tonnage (thousands) 1952	1953	1954	1955	1960-65
Bulk cargo - Other					
Morehead City	..	..	..	2	20
Wilmington	..	..	..	..	50
Total Imports					
Morehead City	162	142	146	130	215
Wilmington	214	197	276	354	785

Inter-Port Distribution of Exports

Exports for the two ports together which amounted to 217,000 tons in 1955 are forecasted to average 400,000 tons annually in the 1960-65 period.

Major increases can be expected in the exports of tobacco, the background for which will be discussed in a later chapter. On the basis of the tobacco production in the trade territories of each port, the 100,000 tons of tobacco forecasted to be exported annually in the 1960-65 period is expected to divide 25,000 tons to Morehead City and 75,000 tons to Wilmington.

Apart from this increase in tobacco exports, the only other major increase anticipated at Morehead City is the development of grain export trade estimated at 25,000 tons annually.

At Wilmington there is a growing export trade in wood pulp, which is expected to reach an annual average of 25,000 tons in the early 1960's, as well as a strong growth indication in miscellaneous general cargo, which is expected to reach 45,000 tons in the 1960-65 period. In addition, given adequate facilities, the export of scrap iron at Wilmington is expected to average 200,000 tons annually or more by the period here under consideration.

The actual exports through the two ports in the past five years, and the forecasted exports by export group for the 1960-65 period, are as follows:

Actual and Prospective Exports

	Tonnage (thousands)				
Export Group and Port	1952	1953	1954	1955	1960-65
General cargo - Tobacco					
Morehead City	..	3	4	5	25
Wilmington	3	9	14	20	75
General cargo - Woodpulp					
Morehead City	..	..	..	..	..
Wilmington	3	..	5	11	25
General cargo - Other					
Morehead City	..	..	..	1	5
Wilmington	1	13	4	29	45
Bulk cargo - Grain					
Morehead City	..	..	..	..	25
Wilmington	..	..	..	..	..
Bulk cargo - Scrap Iron					
Morehead City	..	..	..	..	..
Wilmington	..	..	58	151	200
Bulk cargo - Other					
Morehead City	..	..	..	..	..
Wilmington	..	..	..	..	..
Total Exports					
Morehead City	..	3	4	6	55
Wilmington	7	22	81	211	345

Inter-Port Distribution of Coastwise Trade

Coastwise tonnage at the two ports together which amounted to approximately 3,000,000 tons in 1955 is forecasted to average 3,500,000 tons annually in the 1960-65 period.

No general cargo has moved in coastwise trade at the Port of Morehead City, and the movement at Wilmington has been less than 2,000 tons annually in each of the last four years. There is no reason to expect any major changes in the type and distribution of coastwise cargo in the 1960-65 period.

The following distribution of actual coastwise tonnage at each of the two ports in the past four years, and the annual coastwise tonnage anticipated at each port in the 1960-65 period, are as follows:

Actual and Prospective Coastwise Trade

Coastwise Group and Port	Tonnage (thousands) 1952	1953	1954	1955	1960-65
General cargo - Total					
Morehead City	..	..	..	..	..
Wilmington	a	2	..	1	5
Bulk cargo - Ind. Chems.					
Morehead City	24	..	9	20	20
Wilmington	..	..	..	9	10
Bulk cargo - Pet. Prods.					
Morehead City	181	259	170	162	200
Wilmington	2,575	2,587	2,483	2,773	3,200
Bulk cargo - Molasses					
Morehead City	..	..	..	..	..
Wilmington	..	..	7	5	10
Bulk cargo - Gypsum & Sulfur					
Morehead City	..	..	..	..	..
Wilmington	14	10	14	10	15
Bulk cargo - Fert. Mats.					
Morehead City	..	32	..	..	..
Wilmington	5	..	10	20	25
Bulk cargo - Other					
Morehead City	..	..	..	..	5
Wilmington	7	12	1	1	10

a= less than 500 tons

Inter-Port Distribution of Total Deep-Water Tonnage

On the basis of the above analyses, the total distribution of deep-water tonnage anticipated annually in the 1960-65 period as between the two North Carolina port cities is as follows:

Type of Trade and Cargo	Forecasted 1960-65 Annual Tonnage (thous) Morehead City	Wilmington	Total
Imports			
General cargo	20	250	270
Bulk cargo	195	535	730
Total	215	785	1,000
Exports			
General cargo	30	145	175
Bulk cargo	25	200	225
Total	55	345	400

Type of Trade and Cargo	Forecasted 1960-65 Annual Tonnage (thous.) Morehead City	 Wilmington	 Total
Coastwise			
General cargo	..	5	5
Bulk cargo	225	3,270	3,495
Total	225	3,275	3,500
Total Deep-Water Trade			
General cargo	50	400	450
Bulk cargo	445	4,005	4,450
Total	495	4,405	4,900

Exhibit 19
Page 1 of 1

Composition of Deep-Water Trade at Morehead City

1952 - 1955

(Short Tons)

			Bulk Cargo										Total Bulk	
Year and Item (1)	Total (2)	General Cargo (3)	Grain (4)	Soybeans (5)	Ind. Chems. n.e.c. (6)	Petroleum Products (7)	Molasses etc. (8)	Gypsum Sulphur (9)	Ores (10)	Scrap Iron (11)	Fertilizer Materials (12)	Coal Tar Products (13)	Amount (14)	Percent (15)
1955														
Imports	129,029	..	..	1,506	..	127,523	..	..	..	..	..	..	129,029	100.0
Exports	6,265	6,265	..	..	..	..	..	..	..	..	..	..	..	..
Coastwise receipts	163,775	..	..	..	10,500	153,275	..	..	..	..	..	..	163,775	100.0
Coastwise shipments	18,203	..	..	..	9,181	9,022	..	..	..	..	..	..	18,203	100.0
Total	317,272	6,265	..	1,506	19,681	289,820	..	..	..	..	..	..	311,007	98.0
1954														
Imports	145,635	1,458	..	..	..	144,177	..	..	..	..	..	..	144,177	99.0
Exports	4,066	4,066	..	..	..	..	..	..	..	..	..	..	..	..
Coastwise receipts	169,210	..	..	..	..	169,210	..	..	..	..	..	..	169,210	100.0
Coastwise shipments	9,864	..	..	..	9,268	596	..	..	..	..	..	..	9,864	100.0
Total	328,775	5,524	..	..	9,268	313,983	..	..	..	..	..	..	323,251	98.3
1953														
Imports	141,774	..	..	..	..	131,703	..	..	..	..	10,071	..	141,774	100.0
Exports	3,141	3,141	..	..	..	..	..	..	..	..	..	..	..	0.0
Coastwise receipts	287,697	..	..	..	..	258,897	..	..	..	..	28,800	..	287,697	100.0
Coastwise shipments	3,201	..	..	..	..	..	..	..	..	..	3,201	..	3,201	100.0
Total	435,813	3,141	..	..	..	390,600	..	..	..	..	42,072	..	432,672	99.3
1952														
Imports	161,681	..	..	..	..	161,681	..	..	..	..	..	..	161,681	100.0
Exports	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Coastwise receipts	205,076	..	..	..	23,658	181,418	..	..	..	..	..	..	205,076	100.0
Coastwise shipments	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total	366,757	..	..	..	23,658	343,099	..	..	..	..	..	..	366,757	100.0

Exhibit 20
Page 1 of 1

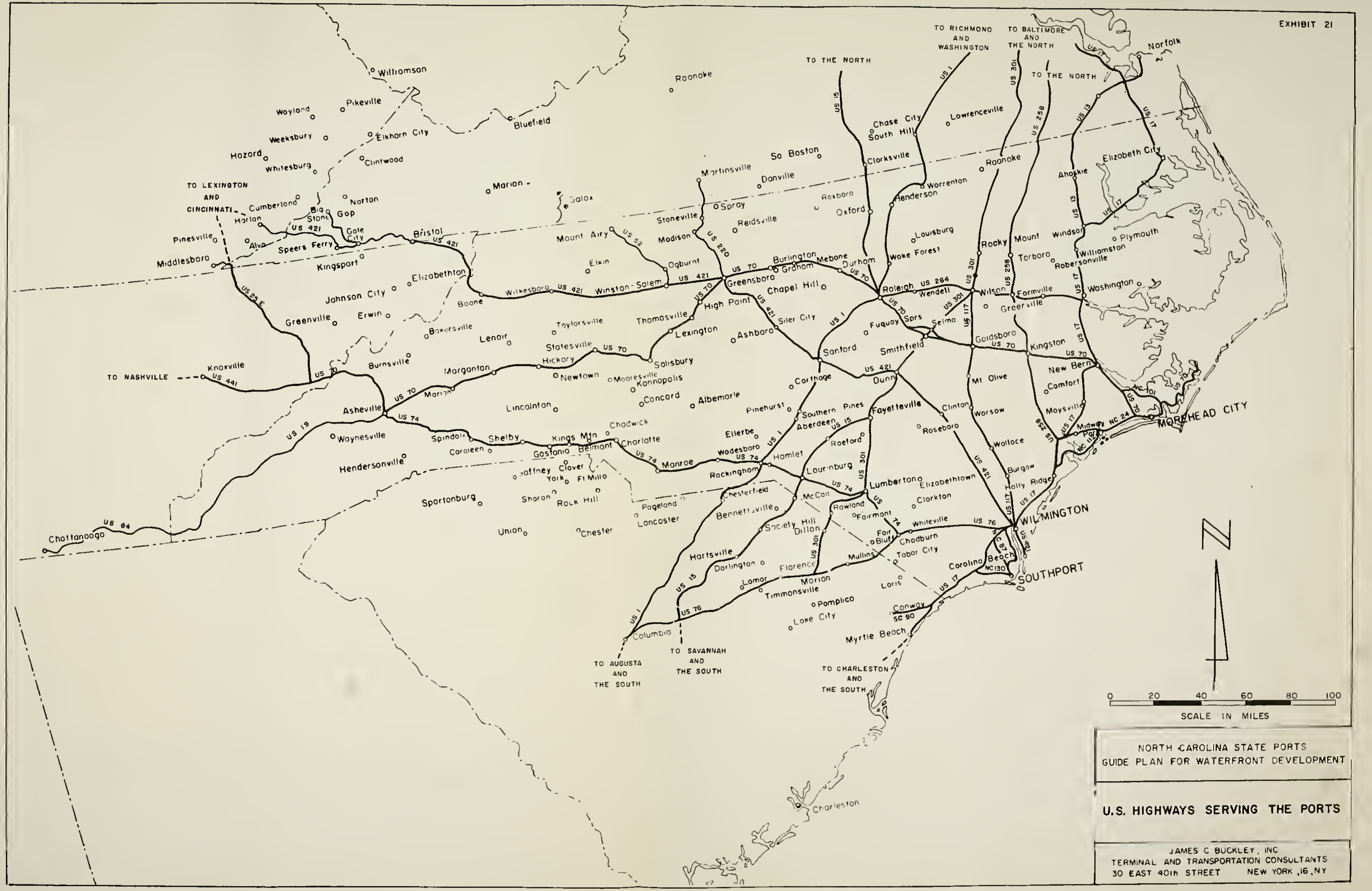
Composition of Deep-Water Trade at Wilmington

1952-1955

(Short Tons)

			Bulk Cargo											
													Total Bulk	
Year and Item (1)	Total (2)	General Cargo (3)	Grain (4)	Soybeans (5)	Ind.Chems n.e.c. (6)	Petroleum Products (7)	Molasses, etc. (8)	Gypsum, Sulphur (9)	Ores (10)	Scrap Iron (11)	Fertilizer Materials (12)	Coal Tar Products (13)	Amount (14)	Percent (15)
1955														
Imports	354,175	58,614	..	..	..	144,940	33,534	..	..	..	110,398	6,689	295,561	83.5
Exports	210,768	59,816	..	..	..	..	96	..	..	150,808	48	..	150,952	71.6
Coastwise receipts	2,806,215	1,373	..	..	9,181	2,760,551	4,545	9,897	..	..	20,209	459	2,804,842	100.0
Coastwise shipments	12,944	..	..	..	..	12,944	..	..	..	..	..	..	12,944	100.0
Total	3,384,102	119,803	..	..	9,181	2,918,435	38,175	9,897	..	150,808	130,655	7,148	3,264,299	96.5
1954														
Imports	276,120	40,990	..	..	..	48,032	18,854	..	..	..	157,160	11,084	235,130	85.2
Exports	80,670	22,718	..	..	..	..	..	..	..	57,952	..	..	57,952	71.8
Coastwise receipts	2,499,832	..	..	..	..	2,467,122	7,049	13,969	..		10,475	1,217	2,499,832	100.0
Coastwise shipments	15,424	..	..	..	..	15,424	..	..	..	..	..	..	15,424	100.0
Total	2,872,046	63,708	..	..	..	2,530,578	25,903	13,969	..	57,952	167,635	12,301	2,808,338	97.8
1953														
Imports	196,929	44,336	..	..	..	4,523	4,243	..	..	..	136,670	7,157	152,593	77.5
Exports	21,865	21,865	..	..	..	..	..	..	..	..	..	..	..	..
Coastwise receipts	2,590,341	1,659	..	..	..	2,566,544	..	9,847	..	..	..	12,291	2,588,682	99.9
Coastwise shipments	20,544	29	..	..	..	20,515	..	..	..	..	..	..	20,515	99.9
Total	2,829,679	67,889	..	..	..	2,591,582	4,243	9,847	..	..	136,670	19,448	2,761,790	97.6
1952														
Imports	213,651	38,290	..	..	..	2,700	3,714	..	..	..	158,860	10,087	175,361	82.1
Exports	7,423	7,423	..	..	..	..	..	..	..	..	..	..	..	..
Coastwise receipts	2,586,139	30	..	..	..	2,560,338	..	14,344	5,824	..	4,713	890	2,586,109	100.0
Coastwise shipments	14,600	124	..	..	..	14,476	..	..	..	..	..	..	14,476	99.2
Total	2,821,813	45,867	..	..	..	2,577,514	3,714	14,344	5,824	..	163,573	10,977	2,775,946	98.4

EXHIBIT 21

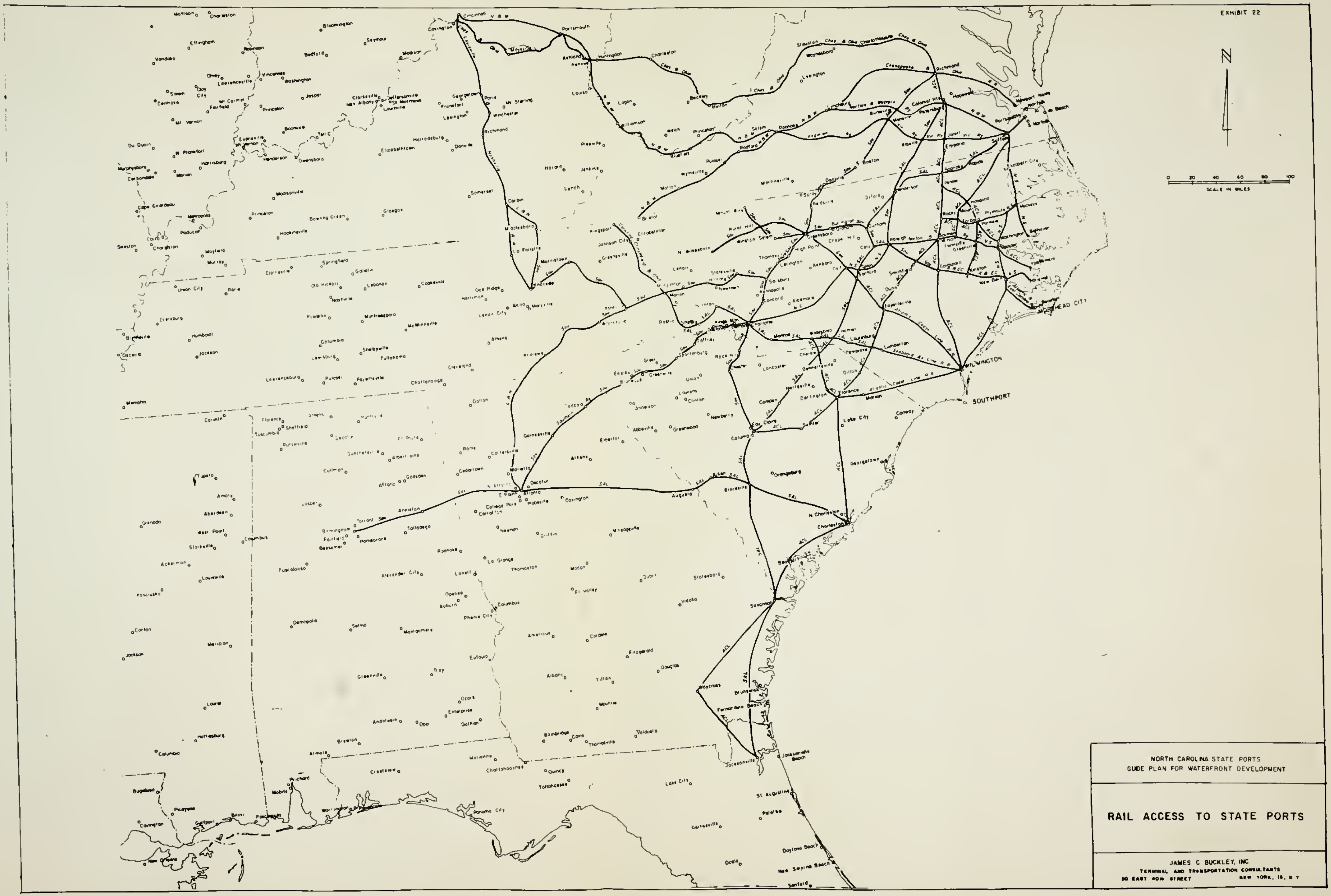


NORTH CAROLINA STATE PORTS
GUIDE PLAN FOR WATERFRONT DEVELOPMENT

U.S. HIGHWAYS SERVING THE PORTS

JAMES C BUCKLEY, INC
TERMINAL AND TRANSPORTATION CONSULTANTS
30 EAST 40th STREET NEW YORK ,16 ,NY

EXHIBIT 22

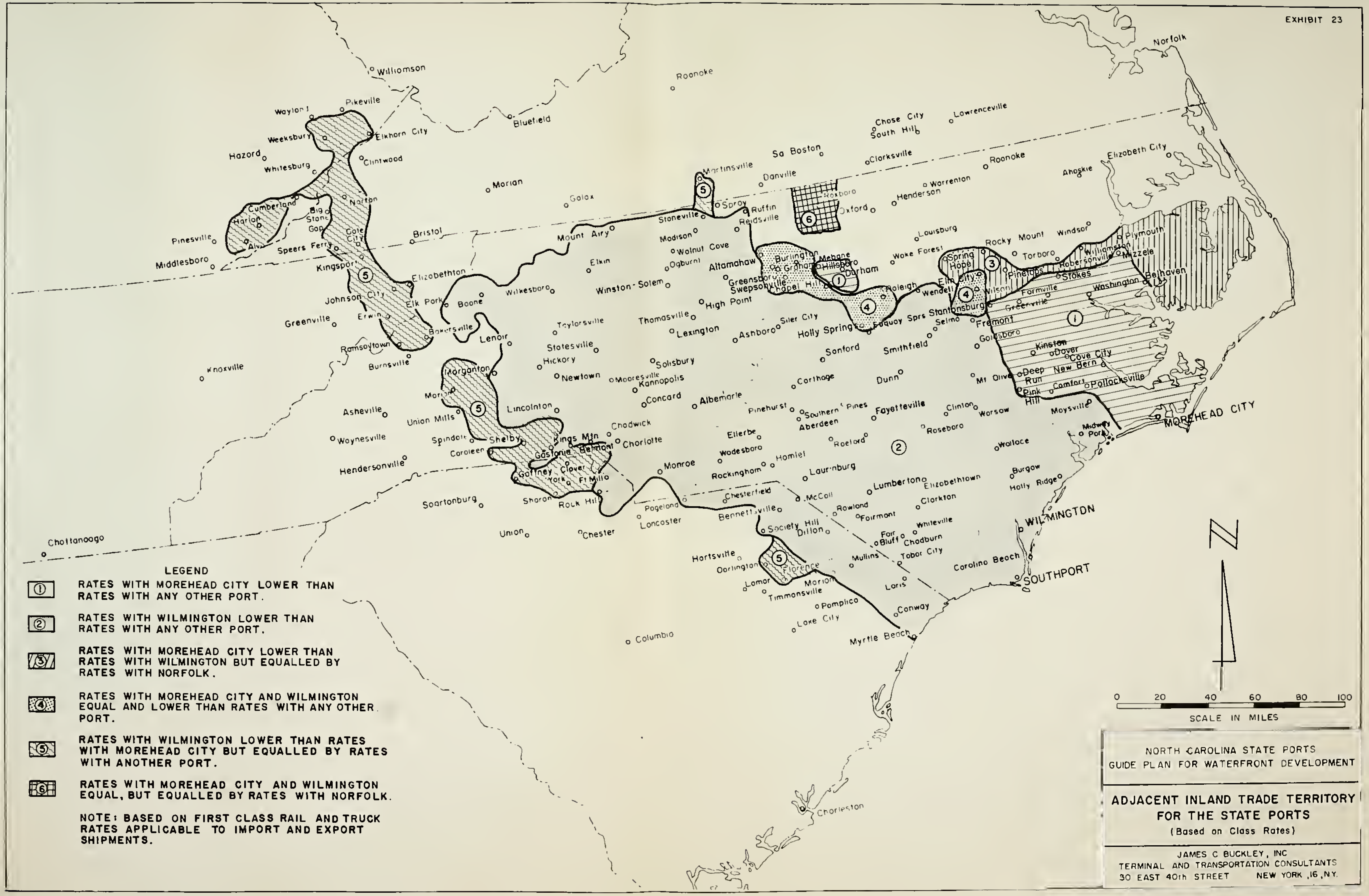


NORTH CAROLINA STATE PORTS
GUIDE PLAN FOR WATERFRONT DEVELOPMENT

RAIL ACCESS TO STATE PORTS

JAMES C BUCKLEY, INC
TERMINAL AND TRANSPORTATION CONSULTANTS
50 EAST 40th STREET NEW YORK, 16, N Y

EXHIBIT 23



LEGEND

- ① RATES WITH MOREHEAD CITY LOWER THAN RATES WITH ANY OTHER PORT.
- ② RATES WITH WILMINGTON LOWER THAN RATES WITH ANY OTHER PORT.
- ③ RATES WITH MOREHEAD CITY LOWER THAN RATES WITH WILMINGTON BUT EQUALLED BY RATES WITH NORFOLK.
- ④ RATES WITH MOREHEAD CITY AND WILMINGTON EQUAL AND LOWER THAN RATES WITH ANY OTHER PORT.
- ⑤ RATES WITH WILMINGTON LOWER THAN RATES WITH MOREHEAD CITY BUT EQUALLED BY RATES WITH ANOTHER PORT.
- ⑥ RATES WITH MOREHEAD CITY AND WILMINGTON EQUAL, BUT EQUALLED BY RATES WITH NORFOLK.

NOTE: BASED ON FIRST CLASS RAIL AND TRUCK RATES APPLICABLE TO IMPORT AND EXPORT SHIPMENTS.

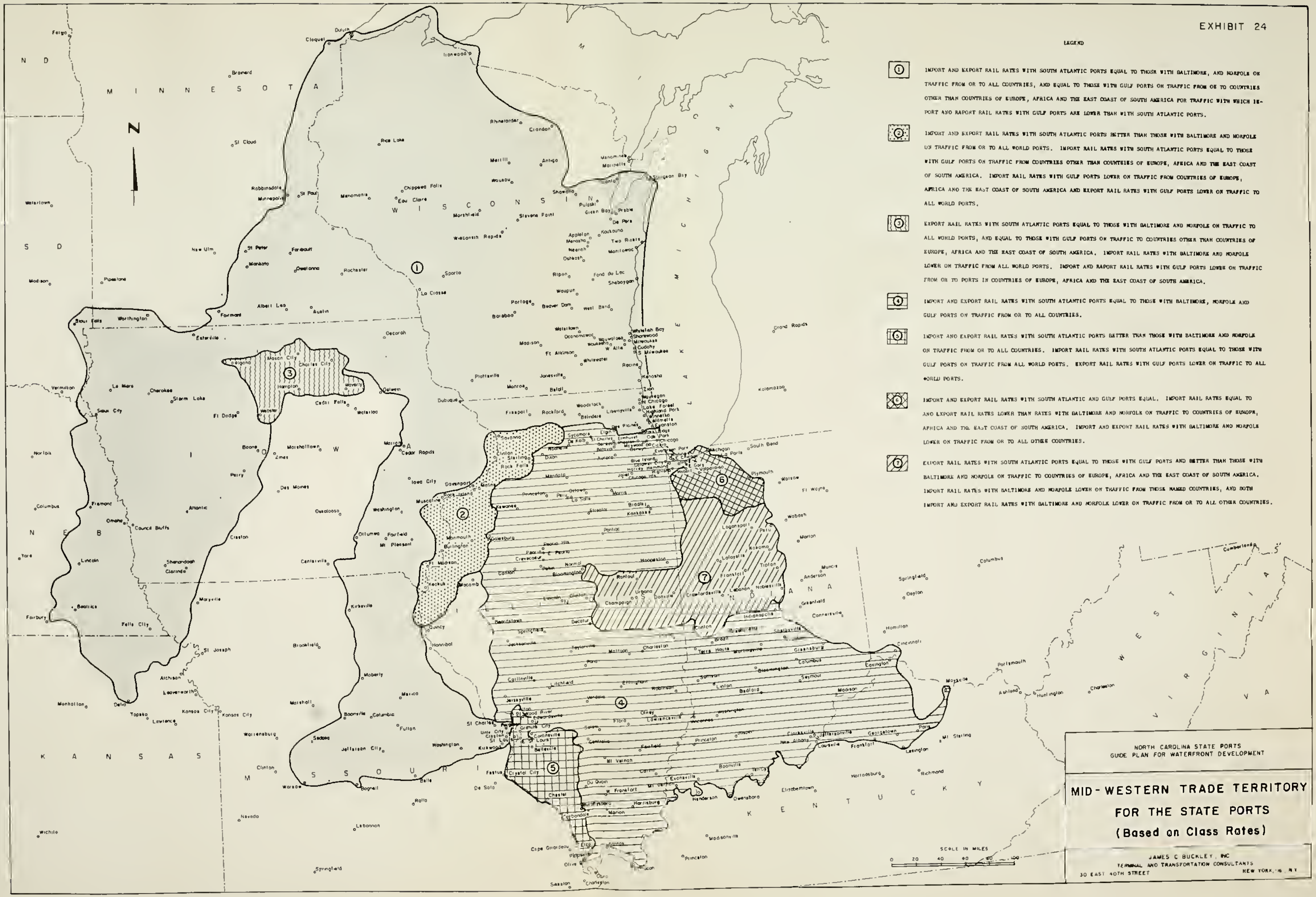
NORTH CAROLINA STATE PORTS
GUIDE PLAN FOR WATERFRONT DEVELOPMENT

ADJACENT INLAND TRADE TERRITORY FOR THE STATE PORTS

(Based on Class Rates)

JAMES C BUCKLEY, INC
TERMINAL AND TRANSPORTATION CONSULTANTS
30 EAST 40th STREET NEW YORK, 16, N.Y.

EXHIBIT 24



LEGEND

① IMPORT AND EXPORT RAIL RATES WITH SOUTH ATLANTIC PORTS EQUAL TO THOSE WITH BALTIMORE, AND NORFOLK ON TRAFFIC FROM OR TO ALL COUNTRIES, AND EQUAL TO THOSE WITH GULF PORTS ON TRAFFIC FROM OR TO COUNTRIES OTHER THAN COUNTRIES OF EUROPE, AFRICA AND THE EAST COAST OF SOUTH AMERICA FOR TRAFFIC WITH WHICH IMPORT AND EXPORT RAIL RATES WITH GULF PORTS ARE LOWER THAN WITH SOUTH ATLANTIC PORTS.

② IMPORT AND EXPORT RAIL RATES WITH SOUTH ATLANTIC PORTS BETTER THAN THOSE WITH BALTIMORE AND NORFOLK ON TRAFFIC FROM OR TO ALL WORLD PORTS. IMPORT RAIL RATES WITH SOUTH ATLANTIC PORTS EQUAL TO THOSE WITH GULF PORTS ON TRAFFIC FROM COUNTRIES OTHER THAN COUNTRIES OF EUROPE, AFRICA AND THE EAST COAST OF SOUTH AMERICA. IMPORT RAIL RATES WITH GULF PORTS LOWER ON TRAFFIC FROM COUNTRIES OF EUROPE, AFRICA AND THE EAST COAST OF SOUTH AMERICA AND EXPORT RAIL RATES WITH GULF PORTS LOWER ON TRAFFIC TO ALL WORLD PORTS.

③ EXPORT RAIL RATES WITH SOUTH ATLANTIC PORTS EQUAL TO THOSE WITH BALTIMORE AND NORFOLK ON TRAFFIC TO ALL WORLD PORTS, AND EQUAL TO THOSE WITH GULF PORTS ON TRAFFIC TO COUNTRIES OTHER THAN COUNTRIES OF EUROPE, AFRICA AND THE EAST COAST OF SOUTH AMERICA. IMPORT RAIL RATES WITH BALTIMORE AND NORFOLK LOWER ON TRAFFIC FROM ALL WORLD PORTS. IMPORT AND EXPORT RAIL RATES WITH GULF PORTS LOWER ON TRAFFIC FROM OR TO PORTS IN COUNTRIES OF EUROPE, AFRICA AND THE EAST COAST OF SOUTH AMERICA.

④ IMPORT AND EXPORT RAIL RATES WITH SOUTH ATLANTIC PORTS EQUAL TO THOSE WITH BALTIMORE, NORFOLK AND GULF PORTS ON TRAFFIC FROM OR TO ALL COUNTRIES.

⑤ IMPORT AND EXPORT RAIL RATES WITH SOUTH ATLANTIC PORTS BETTER THAN THOSE WITH BALTIMORE AND NORFOLK ON TRAFFIC FROM OR TO ALL COUNTRIES. IMPORT RAIL RATES WITH SOUTH ATLANTIC PORTS EQUAL TO THOSE WITH GULF PORTS ON TRAFFIC FROM ALL WORLD PORTS. EXPORT RAIL RATES WITH GULF PORTS LOWER ON TRAFFIC TO ALL WORLD PORTS.

⑥ IMPORT AND EXPORT RAIL RATES WITH SOUTH ATLANTIC AND GULF PORTS EQUAL. IMPORT RAIL RATES EQUAL TO AND EXPORT RAIL RATES LOWER THAN RATES WITH BALTIMORE AND NORFOLK ON TRAFFIC TO COUNTRIES OF EUROPE, AFRICA AND THE EAST COAST OF SOUTH AMERICA. IMPORT AND EXPORT RAIL RATES WITH BALTIMORE AND NORFOLK LOWER ON TRAFFIC FROM OR TO ALL OTHER COUNTRIES.

⑦ EXPORT RAIL RATES WITH SOUTH ATLANTIC PORTS EQUAL TO THOSE WITH GULF PORTS AND BETTER THAN THOSE WITH BALTIMORE AND NORFOLK ON TRAFFIC TO COUNTRIES OF EUROPE, AFRICA AND THE EAST COAST OF SOUTH AMERICA. IMPORT RAIL RATES WITH BALTIMORE AND NORFOLK LOWER ON TRAFFIC FROM THOSE NAMED COUNTRIES, AND BOTH IMPORT AND EXPORT RAIL RATES WITH BALTIMORE AND NORFOLK LOWER ON TRAFFIC FROM OR TO ALL OTHER COUNTRIES.

NORTH CAROLINA STATE PORTS
GUIDE PLAN FOR WATERFRONT DEVELOPMENT

MID-WESTERN TRADE TERRITORY FOR THE STATE PORTS (Based on Class Rates)

JAMES C BUCKLEY, INC
TERMINAL AND TRANSPORTATION CONSULTANTS
30 EAST 40TH STREET
NEW YORK, 16, N Y

VII. Capacity and Indicated Deficiencies in Existing Facilities

Among its general purposes, the State Ports Authority is authorized:

> "To acquire, construct, equip, maintain, develop and improve the port facilities" (at Morehead City, Southport and Wilmington).

Such action by the Authority is reasonably indicated, however, only if it appears that existing facilities will not be adequate to handle prospective tonnage. The tonnage expected to require accommodation at each port during the 1960-65 period, as developed in the preceding chapter, is as follows:

Type of Traffic	Forecasted Annual Tonnage, 1960-65 Morehead City	Wilmington
General Cargo	50,000	400,000
Bulk Cargo		
Coal tar products	..	10,000
Fertilizer materials	..	175,000
Grain	25,000	..
Gypsum and sulphur	..	15,000
Industrial chemicals	20,000	10,000
Molasses	..	85,000
Petroleum products	375,000	3,450,000
Scrap iron	..	200,000
Other	25,000	60,000
Total	495,000	4,405,000

In order to determine the need, if any, for action by the State to accommodate this forecasted tonnage, a determination was first made as to the capacity of existing facilities on the waterfronts of the affected State ports, both privately-owned and publicly-owned, to handle the various types of cargo in prospect in the 1960-65 period. This was accomplished by rating the individual piers in the following manner:

1. The capacity of public piers and terminals was established by inspection of each facility. The physical characteristics affecting or limiting operations were noted, and an effective capacity representing tonnage which could be economically handled through each installation was estimated. The estimated capacity of these installastions is a realistic figure representative of normal operations rather than the top figure which could be reached during around-the-clock operations such as might be performed in case of wartime or under conditions of national emergency.

2. Estimated capacity so established was then discussed and confirmed with the owners or operators of each facility.

3. The capacities of piers and terminals supporting industrial locations were established through discussions with each industry of the current use and capacity of each of its pier properties as limited only by the capacity of inland facilities served, but including any expansion of the inland facilities considered for the immediate future.

The results of these investigations are given in Exhibits 25 and 26 which begin on Pages 117 and 118. These exhibits are a pier-by-pier analysis of all marine terminal facilities in the ports, showing locations in each port; the type of operation as between use as a public terminal, use as a private terminal, and other uses; and the estimated capacity as between general cargo capacity and capacity for the handling of each of the various types of commodities which move in bulk.

These investigations established a total annual capacity existing in the Port of Morehead City for the handling of water-borne commerce of about 2,300,000 tons per year, -- well above the indicated total demand during the 1960-65 period of about 500,000 tons annually; and a total annual capacity existing in the Port of Wilmington for the handling of water-borne commerce of about 7,200,000 tons per year, also well above the indicated total annual demand during the 1960-65 period of about 4,405,000 tons.

It is necessary, however, to refine this analysis because of the variety of types of water-borne commerce in prospect, in order to be sure that there will be sufficient capacity for each type of cargo to handle the prospective needs of

that type. The results of this detailed capacity-by-commodity analysis for each port are discussed below.

A. Port of Morehead City

A complete description of existing marine terminal facilities at Morehead City was given in Chapter III. The present discussion establishes the capacity of those facilities for the handling of deep-water tonnage and, by comparison with prospective demand, reveals the deficiencies which merit attention by the Authority.

Morehead City - General Cargo Capacity and Demand

The existing annual capacity of the Port for the effective handling of general cargo is supplied entirely by the State Ports Authority Terminal. It is estimated that 182,000 short tons of general cargo, as differentiated from bulk items such as grain, petroleum and petroleum products, fertilizer and the like, can be handled through this facility. Thus 182,000 tons is the estimated capacity of the entire port. Actually, only 6,265 tons of general cargo moved through the Port in 1955, and 5,524 tons in 1954. The prospective average annual volume in the 1960-65 period is 50,000 tons. Existing annual capacity is more than adequate for this prospective annual volume and no action by the State appears to be indicated.

The basic problem at Morehead City is the use to be made of the excess capacity now available for the handling of general cargo. As shown in the preceding chapter, tobacco exports of 25,000 tons annually will account for 50% of the Port's prospective general cargo trade in the 1960-65 period. Tobacco is, therefore, the nucleus upon which the Port must build its shipping services. As more and more tobacco is offered for shipment through the Port, attracting liner-type service and additional tramp vessel service, a build-up of cargoes consisting of a wider range of commodities can be expected. Tobacco, therefore, must be recognized

not only as a major tonnage element in its own right, but also as a lever to build up the Port's shipping services and tonnage in other commodities.

Because of the manner in which tobacco is handled in foreign trade, more back-up warehouse space is needed than for the normal in-transit handling of average general cargoes. Unlike textile manufactures, paper, metals and manufactures, machinery and chemicals, which are produced throughout the year and generally forwarded to a port to fill a specific export order only a few days prior to the arrival of a specified vessel for ocean shipment, tobacco is produced seasonally, and great quantities of the export types are forwarded to ports for storage even before sale is accomplished or shipping instructions are known. It is subsequently inspected at the port by foreign buyers, sampled and sold. Only then can ocean shipping arrangements be made. Periods of storage, pending actual movement of the commodity to its final destination, may vary from thirty days to a maximum of two to three years. Some idea of the extent of storage facilities needed may be seen from a review of the tobacco moving through the ports of Newport News and Norfolk, and of the storage space all or partly dedicated to the handling of unmanufactured tobacco at these ports.

	Tobacco Trade - 1955		Warehouse Space - 1948	
Port	Imports (short tons)	Exports (short tons)	Tobacco and General Mdse. (sq. ft.)	General Merchandise (sq. ft.)
Newport News	16,788	183,836	2,039,386	..
Norfolk	14,729	76,633	379,572	3,475,242

The annual general cargo capacity of the Port of Morehead City stated above as 182,000 tons is predicated on a minimum of storage of any commodity beyond the free time period allowed, either for export before the arrival of a vessel, or for import after the departure of a vessel. This would mean that none of the

131,645 square feet of transit shed space would be considered available for the long-term storage of tobacco. There is only 85,400 square feet of warehouse space at the Port other than in transit sheds, and this would have to provide the storage required for tobacco and for such other items as might be stored temporarily at the Port. Even if this space were used entirely for tobacco, it would provide storage for only 9,000 hogsheads of tobacco tiered three high.

With the substantial excess of general cargo handling capacity existing and in prospect at Morehead City during the 1960-65 period, it would seem reasonable to reduce the transit shed space reserved for the handling of general cargo to an amount which would provide a safe margin above the general cargo expected to move through the port, and to devote the balance of such space to the long-term storage of tobacco. To this end, it would appear logical:

1. To reserve a 20,000 square foot section of transit shed space on the Ocean Dock for the handling of general cargo other than tobacco.

2. To reserve an additional 40,000 square feet of space on the Ocean Dock for the transit handling of cargoes of tobacco arriving at the port for early shipment on specific vessels.

3. To reserve one-half of the 32,000 square feet of older transit shed space on the Long Dock for the transit handling of general cargo and one half for the storage of grain and/or general cargo other than tobacco.

4. To reserve all other space in the two Ocean Dock transit sheds and in the two warehouses in the rear of these sheds for the long-term storage of tobacco.

The effect of the above actions will be to reduce the total general cargo handling capacity of the port, including tobacco, to approximately 116,000 short tons annually through 76,000 square feet of transit space. This will still be more than double the prospective annual general cargo volume of 50,000 tons, thus providing a generous margin of safety for this trade.

The effect of these operational steps on the space available for the storage of tobacco would be to provide long-term storage for approximately 13,000 hogsheads

of tobacco tiered three high. Assuming 50%, or 12,500 short tons of the anticipated through-movement of 25,000 tons in the 1960-65 period would be held in long-term storage, there would still be a shortage of approximately 100,000 square feet of gross storage space for tobacco at Morehead City. It is recommended that at least this amount of storage space be developed immediately to attract the tobacco trade.

Since the reduced capacity of the Port Terminal to handle general cargo would still be more than double the anticipated annual movement of 50,000 tons in the 1960-65 period, no action by the Authority to augment transit facilities at the port appears to be necessary.

Morehead City - Grain Handling Capacity and Demand

There is one grain loading facility in the Port for the transfer of bulk grain from cars, barges or storage to ocean vessels. This facility was only recently completed by the State Ports Authority on part of its "Long Dock" at the State Ports Authority Terminal. The rated capacity of the loading tower is stated to be 5,000 bushels per hour, although with delays occurring in actual operations, it is estimated that an overall performance of not more than 2,500 bushels per hour can actually be accomplished, or a daily loading of from 560 to 660 short tons. Assuming 500 tons as the daily capacity, and 104 days per year with vessels actually alongside for loading, the annual capacity of this equipment has been estimated at 52,000 short tons per year. The average annual volume of this commodity anticipated in the 1960-65 period is 25,000 tons. Existing annual capacity is more than adequate for the prospective annual demand, and no action by the Authority appears to be indicated.

Morehead City - Petroleum and Petroleum Products Capacity and Demand

Four piers were found to handle petroleum and petroleum products in the port.

Three of these are on the deep draft channel and one on a shallow draft channel in Bogue Sound. This latter pier is used for the receipt of petroleum products which are subsequently served to fishing boats at the same pier. The combined annual capacity of these installations to handle bulk petroleum and petroleum products is estimated at 1,710,000 short tons. It should be pointed out that two of the three bulk receiving piers on the deep draft channel are Piers 9 and 11 of the State Ports Authority Port Terminal.

In 1955, the total bulk movement of petroleum and petroleum products was 408,097 short tons, and in 1954 the total was 378,780 short tons. The prospective average annual deep-water movement in the 1960-65 period is 375,000 short tons, which is considerably under the existing capacity and no action by the Authority appears to be necessary.

Morehead City - Capacity and Prospective Utilization of Facilities to Handle Other Liquid Bulk Cargo Trades

The total existing annual capacity for the movement of other liquid bulk cargo such as industrial chemicals and asphalt is estimated at 120,000 short tons. In 1955 the movement of these commodities through the Port was 27,769 short tons. Existing annual capacity, which, incidentally, is continually being increased by the industries involved as their need requires, is more than adequate for the prospective annual volume in the 1960-65 period, and no action by the Authority appears to be indicated. The Authority may wish to reconsider this recommendation in the future if the export shipment of fish oil produced in local Menhaden fish processing plants reaches proportions which would warrant the installation of small bulk storage facilities to expedite the shipment of this item. Export volume at present - or in the foreseeable future, however, does not warrant any action in this matter.

B. Port of Wilmington

A complete description of existing marine terminal facilities at Wilmington was also given in Chapter III. The present discussion will establish the capacity of those facilities for the handling of deep-water tonnage and, by comparison with prospective demand, the deficiencies which merit attention by the Authority.

Wilmington - General Cargo Capacity and Demand

There are three piers in the Port of Wilmington which presently handle general cargo. One of these is a former iron works pier with a transit shed of approximately 50,000 square feet; one is really an inland warehouse with marginal berths along the river and with narrow sheds leading back from the wharf to the warehouse space; the third is the North Carolina State Ports Authority facility. The latter facility is the only modern terminal facility in the Port with rail access to shipside, with concrete apron, and with access to driveways and adequate doorways to permit truck operations directly into the transit sheds and warehouses. The combined annual capacity of these three piers is 272,500 tons.

The actual general cargo capacity utilized in 1955 was 116,813 tons, as against 62,048 tons in 1954. This utilization was considerably under the capacity of the Port, so that no general cargo offered to the Port should have been turned away because of lack of facilities. It is a fact, however, that cargoes have been refused by the Port and diverted to other ports for lack of adequate berthing and transit handling space, and vessels accepted have frequently been delayed in docking for these same reasons.

This inability to accept a ship with cargo consigned to the port is explained as follows:

1. The State Port Authority Terminal has a total berthing space of 1,510 feet, sufficient for the simultaneous berthing of three ocean-going vessels. Two of these are served by transit sheds while the third is open and suitable at best for the

handling of cargoes which can be transferred to open storage, or for the berthing of a passenger vessel. During 1955 the two working berths of the terminal were occupied 67 days and 81 days respectively and during that period all three berths were occupied simultaneously for a total of 27 days. This picture continued serious during the first nine months of 1956 with the two working berths occupied 212 days and 105 days respectively and all three berths occupied simultaneously for 23 days.

2. Each of the other terminals in the Port which has been classified as a general cargo terminal actually only receives refined sugar shipments. Each has only one berth and one of the two does not always have transit space available for the handling of an unexpected cargo.

Under the circumstances, it is readily seen that the Port of Wilmington is seriously in need of additional berthing and transit space if it is to survive in the strong competition with the Virginia and other South Atlantic Ports, and to secure its rightful share of the deep-water commerce moving through the ports which serve Virginia and the South Atlantic region.

With a prospective annual volume of general cargo deep-water trade in the 1960-65 period of 400,000 tons, there will be an indicated deficiency at Wilmington in accommodations for this type of cargo of 130,000 tons annually even if all existing facilities continue in operation. Since there is some doubt as to whether both privately-owned facilities will continue, it would probably be wise for the Authority to plan to provide additional capacity for general cargo of 150,000 tons to 200,000 tons annually.

With a prospective annual tobacco movement in its general cargo trade of 75,000 tons during the 1960-65 period, Wilmington faces the same problem as does Morehead City with respect to space for long-term tobacco storage - but with the requirment three times as great. On the basis of past relationships, it is expected that virtually all of this trade will move through the Authority's facilities if it moves at all. On the assumption that 50% of the through movement of tobacco would be held in long-term storage, there is an indicated need

for 700,000 square feet of gross storage space for tobacco at the Authority's installation at Wilmington. This requirement is in addition to the existing warehouse facilities, expected to be required for the storage of other general cargo at the volume anticipated in the 1960-65 period.

Wilmington - Petroleum and Petroleum Products Capacity and Demand

There are seven piers in the Port of Wilmington handling petroleum and petroleum products. One of these seven was rebuilt and enlarged in 1948; another was built in 1950; another was completed in 1955; and another, serving the fuel needs of a railroad, was built in 1956. The combined annual capacity of these piers is 5,580,000 short tons per year, with a comfortable margin of expansion possible as necessary. In 1955, the total movement of bulk petroleum and petroleum products through the Port of Wilmington was 2,767,603 short tons, as against a 1954 volume of 2,376,326 tons. The prospective average annual deep-water movement of these products in the 1960-65 period is 3,450,000 tons. Existing capacity is more than adequate for the prospective annual volume in the 1960-65 period and no action by the Authority appears to be indicated.

Wilmington - Other Liquid Bulk Cargo Capacity and Demand

There are three facilities in the Port now handling such items as asphalt, tars and molasses. The asphalt terminal receives its product over a pier of one of the major petroleum companies, and a pile creosoting industry and a molasses processing plant each has its own facility. The combined capacity of these three installations is 260,500 tons, with increased capacity possible as necessary. In 1955 a total of 201,074 tons of these commodities was actually handled, as against a total of 192,456 tons handled in 1954. The average annual deep-water volume anticipated in the 1960-65 period is about 165,000 tons. Although the existing capacity is not greatly in excess of the volumes already reached, it

must be remembered that the through-put of these installations may be easily increased by the simple expedient of adding additional lines at the pier and additional storage tanks inland. Consequently, no need for action by the Authority appears to be indicated.

Wilmington - Dry Bulk Cargo Capacity and Demand

In former years there was a total of seven piers in the Port of Wilmington with facilities to receive dry bulk cargo, consisting of

1. One public terminal for the receipt of fertilizer materials
2. Six fertilizer plant piers

Today only two of these piers, both located in Navassa, are considered to have any capacity for the handling of bulk cargo. The third pier in Navassa has not been needed for water-borne commerce for many years; three fertilizer plants above the Hilton Bridge on the Northeast Cape Fear River and their docks have fallen into ruins; and the large railroad bulk receiving pier burned to the ground in 1953. To replace this loss by fire, a railroad-owned general cargo pier was converted to the handling of bulk fertilizer. This converted pier was subsequently increased in size by the construction in the rear of the pier property of a bulk storage warehouse. The total annual capacity of these three existing piers is 610,000 short tons. In 1955 the volume of dry bulk cargo handled at Wilmington was 147,804 short tons as against 183,264 tons at Wilmington and an estimated 47,000 tons at Navassa in 1954. There is at present no other movement of bulk cargoes in the port. Existing annual capacity is more than adequate for the prospective annual volume in the 1960-65 period, and no action by the Authority appears to be necessary.

Wilmington - Scrap Metal Capacity and Demand

This trade is considered separately because:

1. The tonnage has assumed some importance in the port in the last three years.
2. It can only be handled at the State Ports Authority's general cargo terminal.
3. It is a commodity which moves in shipload quantities and the loading of each shipload requires approximately ten to fourteen days.

The actual volume of scrap metals handled from 1953 to the present by year is as follows:

Year	Short Tons
1953	0
1954	57,952
1955	150,808
1956 (yr.ending 6/30)	175,770

It is readily seen that if this cargo can be loaded at the rate of approximately 10,000 tons in fourteen days, it is possible to handle 260,000 tons a year at a berth if a berth be available for the continuous handling of this commodity. To the extent that this is done today at the Authority's facility, general cargo capacity is reduced, the related transit sheds are sterilized so far as the handling of general cargo be concerned, and there is a definite limiting effect on the number of general cargo ships which can be handled. Consequently, there is an indicated need for action by the Authority to provide at least one and preferably two unshedded berths equipped with gantry cranes for the handling of scrap metal. Such a berth could also handle dry bulk cargo, lumber, automobiles, and other cargo not requiring the use of a transit shed.

C. Berth Occupancy - Both Ports

In view of the berth congestion encountered at the Authority's Wilmington facility, a careful study was made of the Authority's records with respect to berth occupancy at both Morehead City and Wilmington. A summary of the results of the analysis at Morehead City is given in Exhibit 27 which appears on Page 120 and at Wilmington in Exhibit 28 which appears on Page 121.

No indicated berth congestion was found at Morehead City; but a considerable degree of congestion was found at Wilmington, confirming again the need for early expansion of the Authority's facilities there.

Exhibit 25
Page 1 of 1

MOREHEAD CITY HARBOR, N.C.

Estimated Capacity of Existing Marine Terminal Facilities

Eng. Ref. No.	Location	Public Wharf (Deep Draft)	Private Wharf (Shallow Draft)	Berthing Space	Transit Shed Area (Sq.Ft.)	Estimated Capacity (Short Tons)						-Remarks-
						General Cargo	Military Cargo	Petroleum Products	Other Liquids	Grain	Total	
1	Calico Creek R.B.		x	45'-30'-90'	-	-	-	-	-	-	-	Mooring, Seafood Receipt and Processing
2	--- " ---		x	50'-50'-100'	-	-	-	-	-	-	-	Mooring, Repair Small Craft
3	--- " ---		x	145'-130'-160'	-	-	-	-	-	-	-	--- " ---
4	--- " ---		x	200'-150'	-	-	-	-	-	-	-	--- " ---
5	--- " ---		x	150'-150'	-	-	-	-	-	-	-	--- " ---
6	--- " ---		x	165'-125'	-	-	-	-	-	-	-	--- " ---
7	--- " ---		x	100'-200'-200'	-	-	-	-	-	-	-	Yacht Basin
8	Opposite Turning Basin	x		200'+				( )			( )	Tank Storage
9	On Turning Basin	x		350'- 80'-101'			200,000	( )			( )	Tank Storage
10	--- " ---	x		1000'	32,000	32,000				52,000	84,000	Space now used for grain storage
11	--- " ---	x		1201'	99,645	150,000		( )	120,000	-	( )	Dry and tank storage
12	Bogue Sound		x	20'-100'- 45'	-	-	-	-	-	-	-	Mooring, Seafood Receipt and Processing
13	--- " ---		x	72'- 70'- 83'	-	-	-	-	-	-	-	Mooring, Servicing Small Craft
14	--- " ---		x	50'- 90' -24'	-	-	-	-	-	-	-	Mooring, Seafood Receipt, Restaurant
15	--- " ---		x	48'-100'	-	-	-	-	-	-	-	Mooring, Seafood Receipt, Service
16	--- " ---		x	75'+	--	-	-	-	-	-	-	Mooring, Small Craft Service
17	--- " ---		x	88' -80'	-	-	-	-	-	-	-	--- " ---
18	--- " ---		x	110'- 50'-100'	-	-	-	-	-	-	-	--- " ---
19	--- " ---		x	50'	-	-	-	-	-	-	-	Repair Small Craft
20	--- " ---		x	75'- 33'- 33'	-	-	-	-	-	-	-	Mooring, Seafood Receipt and Processing
21	--- " ---		x	115'+	-	-	-	-	-	-	-	Mooring, Fishing Vessels
22	--- " ---		x	90'+- 50'	-	-	-	-	-	-	-	Mooring Fishing Vessels
23	--- " ---		x	115'-115'	-	-	-	-	-	-	-	Mooring, Seafood Receipt
24	--- " ---		x	110'- 68'	-	-	-	-	-	-	-	Seafood Receipt and Processing
	Total Capacity					182,000	200,000	1,710,000	120,000	52,000	2,264,000	
	1955 Tonnage Including all Domestic Movement Except Local					7,771	187,000 1/	408,097	27,769	1,890	632,527	

(   ) Withheld to Avoid Disclosure of Information Supplied in Confidence

1/ Estimated

Exhibit 26
Page 1 of 2

WILMINGTON HARBOR, N.C.

Estimated Capacity of Existing Marine Terminal Facilities

Eng. Ref. No.	Location	Public Wharf	Private Industry	Berthing Space	Transit Shed Area (Sq.Ft.)	Estimated Capacity (Short Tons)							Remarks
						General Cargo	Bulk Cargo Dry	Pulpwood	Petroleum Products	Other Liquid	Scrap Metal	Total-All Commodities	
1	Cape Fear River - L.B.		x	960'					( )			( )	Liquid Storage
2	--- " ---		x	720'					( )	( )		( )	--- " ---
3	--- " ---		x	750'					( )			( )	--- " ---
4	--- " ---		x	700'					( )			( )	--- " ---
5	--- " ---		U.S.Govt.	500'-500		-	-	-	-	-	-	-	Shipyard Pier-Not Operated
6	--- " ---		U.S.Govt.	500'-500'		-	-	-	-	-	-	-	--- " ---
7	--- " ---		U.S.Govt.	500'-500'		-	-	-	-	-	-	-	--- " ---
8	--- " ---		U.S.Govt.	875'		-	-	-	-	-	-	-	Outfitting Wharf-Not Operated
9	--- " ---	x		1,510'	158,000	158,000					158,000	316,000	N.C. State Port Authority
10	--- " ---		x	700'						( )		( )	Piling & Liquid Storage
n/n	--- " ---		x	600'					( )			( )	Liquid Storage
11	--- " ---		x	620'					( )			( )	--- " ---
12	--- " ---		x	440'						( )		( )	--- " ---
13	--- " ---	x		416'	49,820	25,000						25,000	Refined Sugar
14	--- " ---		x	178'		-	-	-	-	-	-	-	Not Used
15	--- " ---		x	0		-	-	-	-	-	-	-	Not Used
16	--- " ---		x	264'		-	-	-	-	-	-	-	Berthing Small Craft for Repair
17	--- " ---		x	100'		-	-	-	-	-	-	-	Fish Market
18	--- " ---		City of Wilm.	101'		-	-	-	-	-	-	-	City Wharf-Not Used
19	--- " ---		x	66'		-	-	-	-	-	-	-	Fish Market
20	--- " ---		x	100'		-	-	-	-	-	-	-	Mooring Tow Boats
21	--- " ---		x	183'		-	-	-	-	-	-	-	Wholesale Grocery
22	--- " ---		x	155'		-	-	-	-	-	-	-	Mooring Tow Boats
23	--- " ---		U.S.Govt.	330'		-	-	-	-	-	-	-	Mooring Government Boats
24	--- " ---		x	80'		-	-	-	-	-	-	-	Moored Barge used as Restaurant
25	--- " ---		x	57'		-	-	-	-	-	-	-	Not Used
26	--- " ---		x	140'		-	-	-	-	-	-	-	Not Used
27	--- " ---		x	60'		-	-	-	-	-	-	-	Mooring Tow Boats
28	--- " ---		x	164'		-	-	-	-	-	-	-	Mooring Tow Boats
29	--- " ---		City of Wilm.	30'		-	-	-	-	-	-	-	Mooring City Fire Boat
30	--- " ---	x		775'	175,000	87,500						87,500	Refined Sugar, Tobacco
31	--- " ---		x	56'-200'		-	-	-	-	-	-	-	Not Used
32	--- " ---		x	48'		-	-	-	-	-	-	-	Not Used
33	N.E.Cape Fear River-L.B.		x	250'					( )			( )	Liquid Storage
34	--- " ---	x		450'	71,000		500,000					500,000	Bulk Fertilizer Handling & Storage

Exhibit 26
Page 2 of 2

Eng. Ref. No.	Location	Public Wharf	Private Industry	Berthing Space	Transit Shed Area (Sq.Ft.)	Estimated Capacity (Short Tons)							Remarks
						General Cargo	Bulk Cargo Dry	Pulpwood	Petroleum Products	Other Liquid	Scrap Metal	Total-All Commodities	
35	--- " ---	x		458'-407'	74,270		1/						Bulk Fertilizer Handling & Storage
36	--- " ---	-	-	-	-	-	-	-	-	-	-	-	Burned - 1953
37	--- " ---	-	-	-	-	-	-	-	-	-	-	-	Burned - 1953
38	--- " ---	-	-	-	-	-	-	-	-	-	-	-	Demolished
39	--- " ---		x	300'	16,500	-	-	-	-	-	-	-	Not Used
40	--- " ---	-	-	-	-	-	-	-	-	-	-	-	Not Used - In Ruins
41	--- " --- R.B.	x		220'-220'	-	-	-	-	-	-	-	-	Mooring Small Craft
42	Cape Fear River-R.B.		x	-	-	-	-	-	-	-	-	-	Not Used -Wharf Ext. in Ruins
43	--- " --- R.B.		x	75'	-	-	-	-	-	-	-	-	Small Craft Repair
44	--- " --- R.B.		x	100'-115'	-	-	-	-	-	-	-	-	--- " ---
45	--- " --- R.B.		U.S.Govt.	435'	-	-	-	-	-	-	-	-	Mooring U.S.Eng.Floating Equipt.
46	Cape Fear River-R.B.		x	796'				( )				( )	Movement by Barge
47	--- " --- R.B.		x	400'			( )					( )	Bulk Fertilizer Handling
48	--- " --- R.B.		x	400'			( )					( )	--- " ---
49	--- " --- R.B.		x	-	-	-	-	-	-	-	-		Fertilizer Plant Dock-Not Used
n/n	N.E.Cape Fear River-R.B.		x	-	-	-	-	-	-	-	-	-	--- " ---
n/n	--- " ---		x	-	-	-	-	-	-	-	-	-	--- " ---
n/n	--- " ---		x	-	-	-	-	-	-	-	-	-	--- " ---
	Total Capacity					270,500	610,000	( )	5,580,000	260,500	158,000	7,222,000	
	1955 Deep-Water Tonnage					116,813	147,804	-o-	2,767,603	201,074	150,808	3,384,102	

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1/ See Eng. Ref. No. 34 for combined capacity.

Exhibit 27
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Berth Occupancy at Morehead City Ocean Terminals
April, 1955 through April, 1956

Number of Days Occupied

Month	Year	Five Berths Available U.S. Government Vessels 1/	Commercial Vessels
April	1955	28	6
May	"	10	4
June	"	18	9
July	"	5	12
August	"	4	6
September	"	58	4
October	"	33	8
November	"	1	5
December	"	..	6
January	1956	35	8
February	"	20	3
March	"	16	25
April	"	..	23

1/ Figures do not represent Full Berth Days. Example:

Govt.	Vessels	berthed	May 5, 1955	13
"	"	"	May 6, 1955	9
"	"	"	May 20, 1955	1
"	"	"	May 23, 1955	1
"	"	"	May 24, 1955	1
"	"	"	May 26, 1955	3
	Total			28

Source: North Carolina State Ports Authority Records.

Exhibit 28
Page 1 of 1

Berth Occupancy at Wilmington State Docks
September, 1955 through September, 1956

Number of Days Occupied

Month	Year	Berth No. 1	Berth No. 2	Berth No. 3	All Berths
September	1955	10	21	19	6 1/
October	"	16	18	14	8
November	"	15	14	26	9
December	"	10	14	22	4 2/
January	1956	10	10	28	1
February	"	7	26	11	3
March	"	5	24	3	..
April	"	14	26	11	8
May	"	3	30	9	1
June	"	4	15	3	..
July	"	7	31	5	2
August	"	18	29	9	5
September	"	6	21	26	3 3/

1/ September 22, 1955 - S.S. Eastgate held at Southport and M.S. Santos shut out of State Docks because of lack of berthing space and transit shed space.

2/ December 17, 1955 - S.S. President Tyler with 797 tons of Philippine mahogany destined for Greensboro, North Carolina, diverted to Norfolk, Virginia because of lack of berthing space at Wilmington State Docks.

3/ September 19, 1956 - S.S. Ranerrfjord delayed docking five hours awaiting departure from berth of S.S. Inishowen Head.

Note: Included in the above are 71 berth days for U.S. Government vessels.

Source: North Carolina State Ports Authority Records.

VIII. The Development Plan

The problem of formulating a six-year program for the further development of the Authority's marine terminal facilities resolves itself basically into the problem of providing the additional facilities required to meet the prospective deficiencies as determined in the preceding chapter. These indicated deficiencies may be summarized as follows:

North Carolina State Ports Authority

Prospective Deficiencies at Morehead City and Wilmington

Item	Unit	Prospective Deficiencies Morehead City	Prospective Deficiencies Wilmington
Deep-Water Berths	no.	0	2 or 3
Bulkhead and wharf	l.f.	0	1,200-1,800
Transit sheds	sq. ft.	0	50,000
Warehouse	sq. ft.	100,000	700,000

The problem of meeting these indicated deficiencies will be discussed for each port individually.

Morehead City

The only physical development at Morehead City for which provision needs to be made over the next six years, other than maintenance and periodic replacement with respect to the existing facilities, is the installation of approximately 100,000 square feet of additional warehouse space in order to assist the development of the tobacco trade at the port. This facility should be located so as to be as convenient as reasonably possible to the general cargo berths, and alsO convenient to the fumigation plant.

The obvious location appears to be in Area No. 2 and the facility has been so located in the development plan for the terminal facility at Morehead City which was submitted as Exhibit 1 appearing on Page 12.

With the prospective increase in tonnage through the Authority's facilities at Morehead City, it is likely that there will be increasing difficulty in securing adequate service on rail-haul freight unless additional car storage facilities be provided near to the port. As part of the development program, therefore, it is strongly recommended that the Authority explore with the management of the Atlantic and East Carolina Railway their willingness to provide additional car storage to back up the port operations.

Wilmington

The problem of providing for the prospective deficiencies in the Authority's facilities at Wilmington is much more complicated than the problem at Morehead City.

Currently, the Authority's facility at Wilmington provides 1,510 feet of bulkhead space, which normally would be considered to be a three-berth facility. When treated as a three-berth facility, however, vessels are so placed in relation to the transit sheds as to require longer runs with mechanical equipment than are desireable,with consequent need for additional equipment and personnel and slower loading and unloading than could otherwise be achieved at this modern facility. Actually, of the 1,510 lineal feet of bulkhead, only 900 feet is backed up by transit sheds, with 390 feet being sterilized as delivery and roadway space, and an additional 220 feet being sterilized by a rail turn-out.

To illustrate the difficulty which arises in connection with the use of the existing bulkhead as a three-berth facility, consider the following possible mix of vessels berthed at the facility:

1. If a C-2 vessel with a length of 459 feet such as is used by the South Atlantic Line which serves the port, docked with its bow or stern even with the northernmost end of the bulkhead, it would be served by only 135 feet of transit shed space. This space would conveniently serve only two of the five hatches of the berthed vessel.

2. If forty feet were allowed between the bow or stern of the vessel in Berth 1 and the vessel in Berth 2, the second vessel would be served by 315 feet of the first transit shed, and by 180 feet of roadway. If this vessel were a C-3 type with a length of 492 feet, such as is used by the Isthmian Steamship Line, Inc. which serves the port, at least two of its five hatches would be berthed opposite the street and delivery area between the two transit sheds.

3. If another 40 feet were allowed between the vessel in Berth 2 and the vessel in Berth 3, the vessel in Berth 3 would be served by the entire 450 feet of the second transit shed. If this vessel were a Liberty (441'6"), a Victory (450'3"), or a C-2 (459'3"), it would be properly berthed for cargo handling directly in front of the transit shed. If it were a C-3 (492'), one hatch of the vessel would be opposite the street and delivery area at the south end of the southernmost transit shed.

If two vessels be loading scrap in Berths 1 and 2, one general cargo ship can be handled properly in Berth 3. Any other arrangement of berthing would place the general cargo ship in the position of working two or three of its hatches away from the transit shed from or to which its cargo was moving.

Operated as a 2-berth general cargo facility, the existing bulkhead and transit shed would have a capacity of approximately 300,000 tons of general cargo annually. The present necessity of handling the important scrap metal tonnage of the port at these berths reduces the general cargo capacity by one-half or more, and substantially sterilizes one-half or more of the capacity of the transit sheds for the handling of transit cargo. One basic element in the development plan at Wilmington should be provision for the handling of scrap metal at unshedded piers, thus freeing the existing berths for the handling of general cargo.

While the theoretical capacity of a scrap metal berth could be in the neighborhood of 260,000 tons annually, the practical capacity of such a berth for planning purposes would be more realistically established as 175,000 tons. With

the movement of scrap metal through the Authority's Wilmington facility having already exceeded this figure in the years ended February through June, 1956, advance planning should certainly contemplate the early provision of two such berths. Any excess capacity will then be available for the handling of lumber, timber, automobiles, structural steel, dry bulk cargo, and other items not requiring the protection of covered storage while in transit, as well as for passenger cruise vessels.

With the removal of scrap metal operations from the existing bulkhead, it would have a reasonable annual capacity of approximately 300,000 tons of general cargo, as against a prospective need during the next six years of 350,000 tons to 400,000 tons of capacity. While an additional general cargo berth would provide at least 150,000 tons of additional general cargo capacity, the tendency of general cargo to seek the most economical routes if facilities and services be available argues for providing a little excess capacity against a possible increase at a more rapid rate than forecasted. Consequently, the facts and prospects argue for the provision in the near future of one additional general cargo berth with adequate transit shed space, as well as the two additional unshedded berths to be provided for the movement of scrap metal. In the case of the needed general cargo berth, flexibility can be provided by designing the transit shed so as to permit its use for needed storage space to the extent that it is not needed for transit operations; and this division of space as between warehousing and transit operations can be varied as necessary to accommodate the developing traffic.

From the standpoint of marine terminal facilities at Wilmington, therefore, the problem is one of providing an additional general cargo berth with related transit shed, and two unshedded berths.

Consideration was first given to the problem of locating these facilities. The land owned by the Authority north of its existing facilities was not considered susceptible of efficient or economical development for the specific purposes required.

Other privately owned land along the river is available, but the objectives of economical development, administration and operation would be defeated if the Authority were forced to disperse its limited facilities at various locations within a single port. The obvious and reasonable answer to the need of the State of North Carolina for further development of its facilities at Wilmington is their southward extension into the adjoining property owned by the Federal Government through the United States Maritime Commission. Such extension not only provides the only logical pattern for the facilities needed during the next six years, but it also permits the adoption of a master plan for further port development which can be expected to meet requirements for a very considerable period in the future. For the purposes of framing this development plan at Wilmington, therefore, it is assumed that the Federal Government will be pursuaded to transfer to the State of North Carolina its entire interest in the land and facilities which the Authority now leases from the Maritime Commission, as well as in the old Maritime Commission shipyard adjoining this property on the south, for marine terminal and related development.

With a total of little more than 3,000 feet of developable river frontage between the southernmost end of the present bulkhead and the southern boundary of the old Maritime Commission shupyard, it is essential that the development program adopted for the next six years in order to provide the three new berths recommended above be an integral part of a master plan for the long-term development which will permit maximum utilization of this river frontage to meet the additional needs of future years. To this end, the Development Plan for Wilmington which has been submitted as Exhibit 2, appearing on Page 13 contemplates the meeting of prospective near-term deficiencies by the following improvements:

1. The extension of the existing bulkhead 1,226 feet southward in a straight line, and then 710 in an easterly direction to the northwest corner of the first of the shipways of the old Maritime

Commission shipyard. This bulkhead extension would provide two additional berths of 613 feet each along the line of the present bulkhead, and one of 710 feet extending inland from that line to the shoreline of the shipyard.

2. The construction of a transit and storage shed 500 feet in length and 225 feet in depth starting 75 feet south of the northern limit of this new bulkhead construction. This shed would provide total floor area of 112,500 square feet, of which approximately 75,000 square feet might be reserved initially for long-term storage, with the remaining 37,500 square feet utilized for the transit handling of cargo moving through this new Berth 4, giving it an initial effective capacity of approximately 75,000 tons annually. This capacity would be expansible, by reducing the amount of shed space reserved for storage, to 150,000 tons annually, or more, as needed.

3. The paving of the apron and the construction of crane and rail trackage along the remaining 651 feet of open pier along the new river bulkhead. This would provide one open pier for the handling of scrap metal without utilizing a berth served by a transit shed.

4. The paving of the apron and the construction of crane and rail trackage along the 710 feet of bulkhead extending inland to the first of the shipways of the old Maritime Commission shipyard. This would provide a second open pier for the handling of scrap metal without utilizing a berth served by a transit shed.

5. While the railroad track on these new piers would be connected to that serving the existing piers, new rail access would be provided from the west so as to permit rail service to these new berths without interference with operations on the old bulkhead.

6. Crane rail installed in the aprons of the new piers would be an extension of the crane rail on the present piers so that the gantry cranes serving the open piers will also be available for heavy lifts at the general cargo piers.

The above development for the next 6-year period will be compatible with a further development of the Maritime Commission property which would include:

1. The conversion of one of the new open piers to a shedded general cargo pier.
2. The addition of a two-berth, semi-marginal general cargo pier.
3. The addition of a two-berth bulk cargo pier.

The net result of these further additions would be to double the capacity of the installation as it will be after the completion of the improvements recommended for the next six years. This would give an ultimate facility with the

following capacity:

General cargo	1,000,000 tons
Scrap metal and bulk dry cargo	500,000 tons

Because of the importance of unmanufactured tobacco in the future general cargo trade of the Port of Wilmington, the provision of facilities to meet the near-term deficiencies in marine terminal capacity carries with it an obligation to provide needed facilities for the long-term storage of unmanufactured tobacco. As pointed out in the preceding chapter, this requirement amounts to approximately 700,000 square feet. Of this total,

1. Approximately 75,000 square feet can be provided initially in the new transit shed supporting Berth 4.
2. Approximately 175,000 square feet can be provided in the ground floor of the old Maritime Commission fabricating shop.

This means that about 450,000 square feet of space for the long-term storage of tobacco should be provided over the next six years. Provision has also been made for this space in the Development Plan which has been submitted as Exhibit 2 which appears on Page 13 .

The Development Plans

Development Plans for the Port of Morehead City and for the Port of Wilmington, reflecting the conclusions reached in the above discussions, have been submitted as Exhibits 1 and 2 which appear on Pages 12 and 13 .

IX. Property Rights of the Authority

In view of the fact that the accomplishment of the Development Plan at Wilmington is subject to the acquisition of adjacent property owned by the Federal Government, it is appropriate in this report that consideration be given to the property rights of the Authority in its existing marine terminal facilities, and the terms and conditions on which the Authority might reasonably accept this land and the adjacent land from the Federal Government.

All of the Authority's existing marine terminal facilities at Wilmington have been installed on land leased from the Federal Government through the United States Maritime Commission. The terms of this lease are burdensome from the standpoint of the Authority in several major respects. While the lease is for a period of 50 years from November 7, 1949, at a rental of only $1 per year, it has the following difficult provisions from the standpoint of a Public Agency acting in a proprietary capacity:

1. Title to all improvements transfers immediately to the Federal Government.
2. Even though there is a stated 50-year term, in the event of a national emergency declared by the President, the Maritime Commission has the right on 30 days notice
    a. To terminate the lease as to all or part of the demised premises, or
    b. To declare the lease suspended or inoperative as to the whole or any part of the demised premises.
3. In the event of termination of the lease as to all or part of the demised premises, the Federal Government agrees to pay the Authority only the depreciated book value of any and all buildings, structures, improvements and fixtures which the Authority has placed, built, or constructed on the demised premises. The payment, therefore, will bear no necessary relationship to replacement cost or to the amount of debt which the Authority might have outstanding.
4. If the Federal Government declares the lease suspended or inoperative as to the whole or any part of the demised premises, it is re-

quired to pay the Authority a fair and equitable rental for the use of the lands, buildings, structures and facilities included in such suspension or suspensions; but the amount of such rental is to be determined solely by the Federal Government. The Authority has no assurance, therefore, that it would receive enough rental on any property taken over by the Federal Government under such suspension or suspensions to pay the interest and amortization on any debt which it might have outstanding against such property or improvements.

5. The Federal Government is specifically protected against any claims for severance or consequential damages of whatsoever nature.

6. These rights either to terminate the lease or to suspend the lease relate to the whole or any part of the demised premises, with the result that the Authority might be left with the most undesirable and least productive portions of the demised premises whilst still subject to all the obligations of its lease.

7. The Authority may not sublet any portion of the premises more than 400 feet from the waterfront without the specific permission of the Maritime Commission.

There are numerous other provisions in the Lease Agreement which also obstruct the businesslike operation of a modern port facility. Those recited above, however, are considered to be so restrictive as to make it extremely doubtful whether the Authority could reasonably proceed with any financing on a revenue bond basis, or with any extensive utilization of property for water-related industry in order further to capitalize on its marine terminal investment.

The Authority has, of course, recognized the burden placed on its operations and further development by this Lease agreement, and has also recognized the necessity for acquiring full title to the property which it already occupies, as well as title to the adjacent Federally-owned property which is essential to the further expansion of the modern marine terminal facilities required to serve the growing deep-water commerce of the Port of Wilmington and the State of North Carolina. To this end, the Authority has acquired 323 acres on the west bank of the Brunswick River in Brunswick County, North Carolina, which it has offered to the Maritime Commission in exchange for the Federally-owned property which

it now occupies plus the adjacent Federally-owned property now under the jurisdiction of the Maritime Commission.

To effectuate the transfer and exchange described above, a bill was introduced into the Second Session of the 84th Congress by Representative Bonner providing for the conveyance to the North Carolina State Ports Authority of the Maritime Administration Reserve Shipyard in Wilmington, North Carolina, in exchange for certain lands to be conveyed by the North Carolina State Ports Authority to the United States, and for other purposes. (H.R. 12116) Unfortunately, this Bill included in Section 3 some of the same burdensome provisions which make the existing lease too restrictive to permit proper development of the Authority's port facilities at Wilmington. Specifically:

1. Sub-section (a) of Section 3 reserves to the United States the title to all equipment, machinery, supplies, and steel buildings, with the right without time limit to remove such equipment, machinery, supplies, and steel buildings.

   Obviously the property cannot be used to advantage by the Authority if the Federal Government has the right to leave equipment, machinery, supplies, and steel buildings on it in perpetuity with the right to come in and take them away at any time. A reasonable time limit for the removal of such items as the Federal government might reasonably take away would be perhaps for three to six months after conveyance.

   In addition, the amount that the Federal Government could recover from the sale of steel buildings on the site is obviously inconsequential in relation to the value which such buildings might be to the Authority as a public agency engaged in the development of public marine terminal facilities. It would seem only reasonable that title to such steel and other buildings as may rest on this land flow with the land to the Authority.

2. Sub-section (c) of this Section 3 provides that the conveyance by the Federal Government shall contain a provision which will run with the land that in the event the United States shall, through purchase, condemnation, or requisition, reacquire title to said land, the purchase price to be paid will not exceed the depreciated cost of improvements placed thereon by the North Carolina Ports Authority.

The effect of this provision is that the longer the Authority holds this property and develops it, the greater risk it runs in the event of condemnation by the Federal Government of receiving an award far below the then existing market value of its properties and, consequently, far below the cost to which it would be put to replace those facilities in order to accommodate the deep-water trade of the State of North Carolina. Such a provision might be appropriate if the Federal Government were giving this land to the State of North Carolina, but under the terms of this Bill it is exchanging this land for a substantially greater amount of equally desirable land suitable for exactly the same purposes. It is difficult to find justification for a provision which could operate to the great detriment of the State of North Carolina and to the unjustified advantage of the Federal Government. Such a provision, also, would be a very difficult provision to reconcile with any future attempt to finance Authority improvements with revenue bonds.

3. Sub-section (d) of this Section 3 contains a provision that during any emergency declared by The President or by The Congress, upon determination by the Secretary of Defense that the property is useful for any national defense purpose, the Federal Government has the right to the immediate, full, and unrestricted possession and control of all or any part thereof upon payment of a rental based only on the depreciated costs of improvements made by the Authority without any rental based on the value of the land,- and this condition also runs with the land. In many respects, this provision of the Bill is even more harsh than that included in the existing lease. For example,

   a. The lease provides that the property may be recaptured in the event of a national emergency declared by The President, whereas the Bill covers national emergencies declared either by The President or by The Congress.

   b. In order to invoke its power to recapture under the Bill, the Secretary of Defense does not need to determine that the property is essential for national defense purposes,- but only that it is "useful".

   c. The lease provides for a fair and equitable rental for the use of land as well as improvements, although it does specify that the amount of such rental or rentals is to be determined solely by the Federal Government. The Bill, on the other hand, eliminates any rental based on the value of the land; and limits the rental on improvements to a rental "based on the depreciated costs of improvements".

   The effect of this provision of the Bill would be to place another difficult obstacle in the way of any financing of improvements with revenue bonds, and would also be a major

> obstacle in the way of attracting water-related industry to the portions of this property back of the marine terminal and warehousing facilities.

While the State of North Carolina badly needs its existing marine terminal facilities at Wilmington, and badly needs substantial expansion of those facilities to accommodate prospective traffic over the next six years, it would certainly be an undesirable use of public funds further to improve the property now held under lease in view of the terms and conditions of that Instrument; and it would be an equally undesirable use of public funds further to improve the property, or to improve the adjacent property, were they transferred under the terms and conditions of the Bill described above.

It would certainly seem that a more balanced agreement could be reached between the Federal Government and the State of North Carolina, two public agencies, with respect to the transfer of property to be utilized for an essential public purpose, particularly when the Federal Government is not being requested to donate the property to the State, but merely to exchange it for other equally desirable and much more extensive property in the same area. The argument that there is tangible value in the existing improvements on the Maritime Commission site is unlikely to be sustained by an appraisal of those improvements in their dilapidated and decayed condition.

Consequently, it is recommended that the Authority urge that the State use every reasonable effort before the present Congress to secure the passage of a Bill in substantially the form of that introduced in the last Congress by Representative Bonner with the deletion of Sub-section (c) and (d) of Section 3 of that Bill, and with the amendment of Sub-section (a) of Section 3 of that Bill to eliminate steel buildings from the property to which title is reserved to the United States.

With such amendments, the Bill would effect an equitable exchange of

property between the Federal Government and the State of North Carolina which would permit the Authority to go forward with the needed development of the lands which it presently holds under lease and the adjacent lands presently held by the Maritime Commission, all to the end of providing needed public marine terminal facilities at Wilmington for the benefit of the State of North Carolina and its industry and commerce, as well as for national defense.

X. The Promotion and Protection of Water-Borne Commerce

Up to this point, consideration has been given primarily to the problem of planning and providing adequate physical facilities at the State ports to accommodate prospective deep-water traffic. Equally important is the promotion and protection of the flow of deep-water traffic through these facilities which is justified by the State's position as a generator of water-borne commerce.

The promotion of port commerce has two basic objectives. These are:

1. To attract to the State's ports the water-borne commerce which can be served economically and efficiently through those ports.
2. To retain the patronage thus secured against the competition of other ports.

All too frequently programs of port commerce promotion are directed wholly at the attraction of new business and forget the equally important promotional problem of retaining the patronage already secured. This was not found to be the case with the Authority's program, however, which appears to be reasonably balanced as between solicitation of new business and the servicing of business already secured.

The protection of port commerce has the basic objective of protecting the commerce of the port against unjust and unreasonable rates and charges and discriminatory practices either by ocean carriers, inland carriers, or other ports. The purpose of such activity is not to secure unjust or unwarranted advantages for the State's ports, but to make sure that they enjoy their justified competitive advantage in territory where they can supply most convenient and economical access to deep-water shipping; that they are given an equal position with other ports in territory where they can supply access to deep-water shipping as

conveniently and economically as such other ports; and that they are put to a competitive disadvantage as against other ports only in territories where access to deep-water shipping can be supplied more economically or conveniently through other ports.

Port protection activities typically involve continuous activity with and before State and Federal regulatory agencies. In this field, also, the Authority was found to have a well-established and active program.

Since the Authority is a going concern with well-established programs in the fields of port commerce promotion and port commerce protection, there is little point in giving detailed consideration to either of these activities. Only matters considered of special importance will be discussed.

In the field of port commerce promotion, there is a traditional conflict between those who argue that regular deep-water service cannot be expected until the cargo actually offers, and those who argue that the cargo cannot be expected to develop until regular services are offered. Regardless of which group may be right, there is certainly no argument as to the paucity of regular deep-water service at North Carolina ports today. To illustrate this point, an analysis was made of the sailing schedules published in the New York Journal of Commerce for December 20, 1956. On that day, outbound voyages were listed for 30 vessels which would serve one or more South Atlantic ports on voyages covering ten different world trade areas. The distribution of these vessels by domestic ports of call on these outbound voyages is given in Exhibit 29 which appears on Page 146. In summary, the distribution of these 30 outbound voyages by domestic ports of call was as follows:

Distribution of Domestic Port Calls Scheduled by Thirty Outbound Vessels Serving One or More South Atlantic Ports

Posts of Call	Number of Outbound Vessels
New York	22
Philadelphia	19
Baltimore	22
Hampton Roads Ports	18
Morehead City	0
Wilmington	2
Charleston	20
Savannah	15
Jacksonville	10

Noteworthy in the above tabulation is the balanced representation in these 30 voyages of the major North Atlantic ports; the reasonably balanced representation in the same 30 voyages of ports in South Carolina, Georgia, and Florida; but the almost complete absence of representation by ports in North Carolina. There is obviously a major field for development effort in bringing to one or more ports in North Carolina a greater frequency and a greater variety of deep-water services.

This would, of course, be well-nigh impossible if North Carolina were a weak generator of deep-water tonnage. Unfortunately, no definitive information is available as to the actual deep-water tonnage generated in North Carolina. The availability of such information would be of tremendous value in promoting the better utilization of the State's ports. Consideration should be given by the Authority to a special investigation designed to provide accurate information on this basic question.

In the absence of definitive information, it is still possible to secure clear indications of major deep-water tonnage available to North Carolina ports.

This is particularly true with respect to flue-cured tobacco which makes up a major part of domestic exports of unmanufactured tobacco. Approximately

two-thirds of the domestic acreage of Types 11-14 of flue-cured tobacco is in North Carolina; and about two-thirds of the production of these types of flue-cured tobacco is sold in North Carolina markets. If the movement of such tobacco through North Carolina ports in 1955 had been proportional to North Carolina's position as a producer or as a market for such tobacco, the volume exported through North Carolina ports would have been at least 150,000 tons. The actual figure was 25,000 tons!

The failure of a substantial volume of North Carolina tobacco to move through the North Carolina ports does not appear to be attributable to any substantial extent to inequities in the inland rate structure. The map submitted as Exhibit 30 on Page 147, shows the adjacent inland trade territory for the North Carolina State Ports based on tobacco commodity rates. It will be noted from the map that one or both of the North Carolina Ports have inland rates as low as or lower than any out-of-state port for most of the major tobacco-producing areas of the State. This conclusion is confirmed by Exhibit 31 appearing on Page148 , which shows the ports serving tobacco auction markets on an equal or better basis. It will be noted from this exhibit that of the 49 tobacco auction markets in North Carolina, 38 are served on an equal or better basis by one or both of the State's deep-water ports. While there may be some adjustment in inland tobacco rates which can be justified in favor of the State ports, the market available on an equal or better basis is already far greater than the tonnage actually realized.

There is no other single commodity which can do so much to attract more frequent and more diversified ocean services to the State ports than tobacco. While a special survey has been made, and continuous attention has been given in the solicitation program to the encouragement of tobacco exports, it is

submitted that this trade is of sufficient importance to the State and its ports to warrant continuous full-time promotional effort, even to the extent of locating a full-time tobacco solicitor at a strategic tobacco point, - perhaps Wilson.

Another commodity group which appears to constitute a fertile field for development effort in connection with the commerce of the State ports is cotton textiles and textile products. This commodity is not so important from the standpoint of tonnage as from the standpoint of its high value and, consequently, its high ocean freight rates. As a result, a relatively small volume of this commodity is usually attractive to ocean carriers and will generate service which might be refused for a much greater tonnage of a low-value commodity.

The importance of giving attention in the promotional and protection effort to cotton textiles and textile products flows from the fact that the State of North Carolina is by far the most important state in the union in terms of value added by manufacture in the textile products group. Consequently, it can reasonably be expected to generate a substantial volume of export traffic in this important commodity group, of which 5% or more of domestic production is usually exported.

In the field of cotton textiles, there are definite indications that a major promotional effort would be hampered by inland rates which appear to discriminate against the North Carolina ports, indicating a field for action from the standpoint of port protection in order to lay the ground work for promotional effort in this field.

The apparent discrimination with reference to the North Carolina ports does not appear to exist with respect to rail rates, but it does appear to exist with respect to truck rates.

Present rail rates on finished and unfinished cotton piece goods are based on exceptions to the Uniform Classification. These exceptions reflect a percentage of Docket 28300 First Class rates. The adjacent inland trade territories for the State ports, based on rail cotton piece goods commodity rates, are shown in Exhibit 32 which appears on Page 152 . The territories thus developed are not particularly significant, however, because of the fact that rail rates are consistently higher, even in full carload quantities in excess of 24,000 lbs., than volume rates published by trucking companies. Consequently, only a small percentage of the traffic in textiles and related articles is handled in rail shipment. For reference, there is given in Exhibit 33 which appears on Page 153 typical rail rates on cotton piece goods from selected North and South Carolina points to Charleston, Morehead City, Norfolk and Wilmington.

The territory resulting from an analysis of truck rates covering cotton factory products and textile products is much more important with respect to tonnage potential for the North Carolina State ports and as an indicator of the problems faced by the State Ports Authority in developing and protecting water-borne commerce through the State ports.

Prior to October 1956, no volume truck rates covering these commodities were published by the trucking companies applicable to the Ports of Morehead City, Wilmington, or Norfolk. As a result, North Carolina textile industries were in a territory which belonged exclusively to Charleston, South Carolina, with the following rates in cents per 100 pounds in effect from such important North Carolina textile points as Greensboro, Kannapolis, Rocky Mount and Winston-Salem:

From	TO Charleston (Volume)	Morehead City ---	Wilmington (Any Quantity)	Norfolk (LTL)
Greensboro	.40	None	.60	.60
Kannapolis	.40	None	.63	.63
Rocky Mount	.42	None	.48	.45
Winston-Salem	.38	None	.63	.63

Action by the State Ports Authority for the past several years resulted on October 10, 1956 in volume rates being published which are applicable to Wilmington, but not to Morehead City. Rates were published at the same time applicable to Norfolk. This action improved the picture in North Carolina to the extent that a perimeter of a trade territory for Wilmington could be drawn. The rates are not applicable to Morehead City, therefore, that port controls no territory. The Wilmington territory in this case, however, only means that Wilmington has favorable or equal rates compared to another port from points located along the perimeter and from many points within the perimeter. However, Charleston still has equal or better rates in effect from many points in North Carolina, both within and outside the trade area, even though those points are nearer to Morehead City or Wilmington than to Charleston. Typical of these points are the following:

From	TO Charleston	Wilmington
Asheboro	.40	.40
Newton	.40	.42
Troutmans	.38	.41
Troy	.38	.38
Worthville	.38	.40

The adjacent inland trade territories for the State ports based on these cotton piece goods commodity rates are shown in the map submitted as Exhibit 34 which appears on Page 157. Typical rates from selected North Carolina points to Charleston, Morehead City, Norfolk and Wilmington are given in Exhibit 35

which appears on Page 158.

Subsequent action by the State Ports Authority to include many other points in North Carolina and in northeast South Carolina among those having volume rates resulted in consideration of Docket No. MCTA 2212-145-D on December 10, 1956, by the Southern Motor Carriers Rate Conference in Atlanta. This docket proposed volume rates from some forty-one additional cities in North Carolina as well as from twenty-five cities in northeast South Carolina. These rates have now been approved by the Conference and have been cleared for publication. Typical among the points from which Wilmington does not now have volume rates and from which the proposed rate is frequently, although not always, favorable to Wilmington, are:

	TO	
From	Charleston	Wilmington
Belmont	.40	.40
Carthage	.40	.30
Erwin	.40	.29
Jamestown	.40	.39
Mebane	.40	.39
Anderson (S.C.)	.36	.48
Bethune (S.C.)	.36	.33
Fort Mill (S.C.)	.36	.39
Lancaster (S.C.)	.36	.39
Rock Hill (S.C.)	.36	.39

The publication of these rates which is anticipated in the near future will, except for a few remaining inequities, place the Port of Wilmington in a favorable position to secure traffic from the textile industry in the State. Prompt promotional effort is clearly indicated, as well as continued effort to free the port from the remaining apparent inequities in the inland rate structure.

The key to strong and stable business at the State port lies in the market available in North Carolina and immediately adjacent territory where the North Carolina ports can offer rates equal to or better than those applicable at other

ports. It is felt, therefore, that the major promotional effort should be concentrated in North Carolina, continuing New York representation, however, which is essential for contact with steamship lines and with headquarters offices of major shippers and receivers of ocean freight.

In North Carolina, consideration might well be given to the addition of one or two solicitors to the existing staff which is understood to consist of two. It has been recommended above that one full-time solicitor be appointed to concentrate on tobacco exports, and that he be based at a key tobacco point such as Wilson. It is also suggested that consideration be given to basing a solicitor at Charlotte, another at Winston-Salem and another at Asheville. The advantage of basing solicitors in the field is that local shippers and receivers of deep-water tonnage can become accustomed to calling on them for information and advice and thus build up a stronger and more sympathetic relationship than is possible if all inquiries must be directed to the main office of the Authority at Wilmington. The arrangement suggested would put one full-time man in the heart of the tobacco territory, two full-time men in the Piedmont, and one in the western part of the State who would be able to cover adjacent territory in Tennessee, Kentucky and West Virginia. The Director of Commerce would continue to be stationed at Wilmington.

To increase the effectiveness of these solicitors, it might be desirable to concentrate their efforts in certain key industries for a period of time rather than to spread their efforts thinly over a large number of potential shippers in a wide variety of industries. A review of the present solicitation coverage suggests a program which would

1. Cover the largest industries in each city visited.
2. Be by appointment only.

3. Establish a friendly relationship with the executive heads of industry in the State.
4. Contemplate return visits on a regular basis.

North Carolina industry has not been accustomed to using the State ports, and is not likely to make major changes in its shipping habits except over a considerable period of time. Consequently, more returns in terms of tonnage can be expected from a solicitation effort if it be preplanned with regular calls on good prospects than if it be carried out with the objective of making a maximum number of calls without regard for a carefully-planned and continuing campaign to interest the best prospects in the State in utilizing its ports to their advantage.

In this connection, reference is again made to the desirability of undertaking an investigation which will provide reliable factual data on the distribution by industry and by individual firms of deep-water tonnage originating and terminating in the State. With such basic information, the promotional effort can be carried on much more economically and much more effectively.

As an adjunct to the individual solicitation, it is strongly recommended that periodic port clinics be held at major cities throughout the State, with adequate advance notice and with invitations going to key people in the industries which will benefit the most from utilization of the State ports. It is felt that this should be a regularly-recurring program with perhaps one meeting a month, each in a different key city. To complement the field clinics, it is suggested that consideration be given to an annual port conference at Wilmington at which representative business leaders from throughout the State could meet with the Authority for a discussion of the program of the State ports and for an inspection of their facilities. Traffic managers and other representatives of industry who have actually seen the modern port facilities available in their own State are much

more likely to think about using them than those who have only read about them in the Port Magazine or heard about them from a field solicitor.

There is no question but that the recapture by the North Carolina ports of the deep-water tonnage which they should handle will be an up-hill struggle. It is difficult to change established patterns of trade. The facts are clear, however, that in the case of the North Carolina ports, the established patterns of trade which bypass the ports are less economical and less efficient over the long run for North Carolina shippers and receivers of deep-water cargo than service through the North Carolina ports. Consequently, no matter how difficult the promotional and protective effort may be, every step forward means a further advantage for North Carolina industry and its economy generally, as well as a stronger tonnage base for the State ports. There is, therefore, every reason and justification for a strong program of port commerce promotion and protection by the Authority.

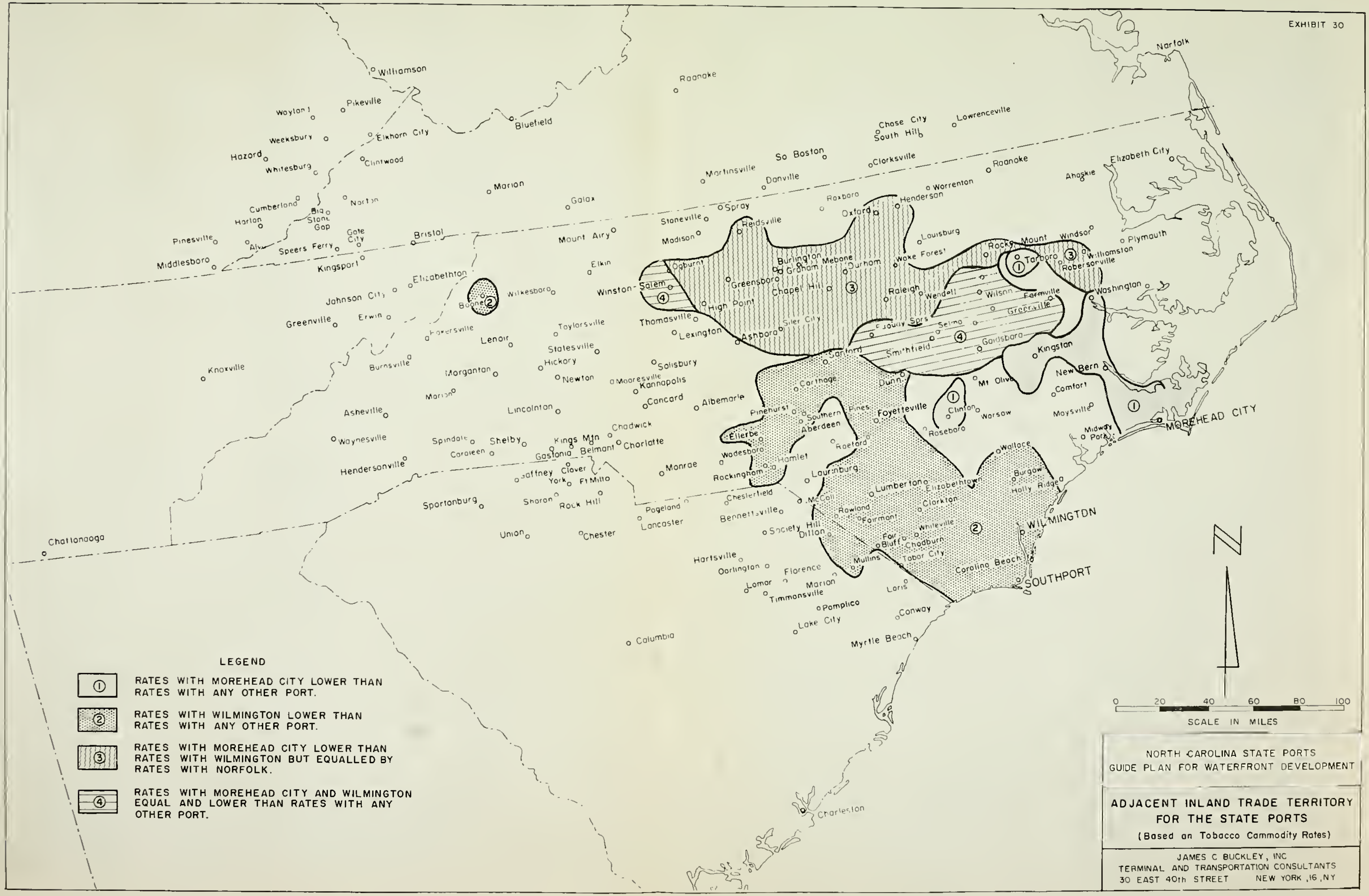
Exhibit 29
Page 1 of 1

Typical Pattern Of Outbound Domestic Port Calls by Carriers Serving South Atlantic Ports

Ocean Carriers	Trade Area	Domestic Port Calls New York	Phila.	Balt.	Hampton Rds.	More'd City	Wilmington	Charleston	Savannah	Jacksonville	Miami
Manchester Liners, Ltd.	Europe	..	X	X	X	..	X	X	X	X	..
South Atlantic Line	"	..	..	..	..	..	X	X	X	X	..
Ocean Stinnes Lines	"	..	..	..	..	..	..	X	X	X	..
Ind. Gulf Line	"	..	..	..	..	..	..	..	X	X	..
Concordia Line	Mediterranean	X	X	X	X	..	..	X	..	..	..
Khedival Mail Line	"	X	X	X	..	..	..	X	..	..	..
Moore-McCormack	S. America	X	X	X	X	..	..	..	X	..	..
Booth Line	"	X	..	X	..	..	..	..	..	X	..
Lloyd Brasiliero	"	X	X	X	..	..	..	..	X	..	..
Ivaran Lines	"	X	X	X	X	..	..	X	..	..	..
Royal Netherlands	"	..	..	..	..	..	..	X	X	X	..
Garcia Line	Cent.Amer.&Gulf	..	..	..	..	..	..	X	X	X	..
Booth-Lampert	Is.of Atlantic	..	..	X	..	..	..	..	..	X	..
Fernville	Far East	..	..	..	..	..	..	..	X	..	..
Barber Line	" "	X	X	X	X	..	..	X	..	..	..
Ellerman-Bucknall	" "	X	X	X	X	..	..	X	..	..	..
Prince Line	" "	X	..	X	X	..	..	X	..	..	..
Ivaran Lines	" "	X	X	X	X	..	..	X	..	..	..
Isthmian-Matson	" "	X	X	X	X	..	..	X	..	..	..
De La Roma Lines	" "	X	X	X	X	..	..	X	..	..	..
O.S.K. Line	" "	X	X	X	X	..	..	..	X	..	..
Maersk Line	" "	X	X	X	X	..	..	X	..	..	..
American Pioneer	" "	X	X	X	X	..	..	X	..	..	..
Blue Funnel Line	Indonesia	X	X	..	X	..	..	X	..	..	..
Isthmian	India-Burma	X	..	..	..	..	..	..	X	..	..
Farrell Lines	S & E Africa	X	X	X	X	..	..	X	X	X	..
S.A.F.Marine Corp.	"	X	..	X	..	..	..	X	..	..	..
Robin Line	"	X	X	X	X	..	..	X	X	X	..
Amer. & Austral.	Australia	X	X	X	X	..	..	..	X	..	..
Port & Assoc. Lines	"	X	X	X	X	..	..	..	X	..	..

Sources: Sailing schedules as published in New York Journal of Commerce, December 20, 1956

EXHIBIT 30



NORTH CAROLINA STATE PORTS
GUIDE PLAN FOR WATERFRONT DEVELOPMENT

ADJACENT INLAND TRADE TERRITORY FOR THE STATE PORTS

(Based on Tobacco Commodity Rates)

JAMES C BUCKLEY, INC
TERMINAL AND TRANSPORTATION CONSULTANTS
30 EAST 40th STREET NEW YORK, 16, N.Y.

Exhibit 31
Page 1 of 4

Ports Serving Tobacco Auction Markets On An Equal Or Better Basis

Location of Tobacco Auction Market	Ports Serving Market On An Equal or Better Basis				
	Norfolk	Morehead City	Wilmington	Charleston	New Orleans
(1)	(2)	(3)	(4)	(5)	(6)
Florida					
High Springs				X	
Jasper				X	
Lake City				X	
Live Oak				X	
Georgia					
Adel				X	
Alma				X	
Baxley				X	
Blackshear				X	
Claxton				X	
Douglas				X	
Fitzgerald				X	
Hahira				X	
Hazlehurst				X	
Metter				X	
Moultrie				X	
Nashville				X	
Pearson				X	
Pelham		X		X	
Quitman				X	
Statesboro				X	
Sylvester		X			
Tifton				X	
Valdosta				X	
Vidalia				X	
Waycross				X	
Illinois					
Cairo					X
Indiana					
Evansville					X
New Albany	X	X	X		X

Exhibit 31
Page 2 of 4

Location of Tobacco Auction Market	Ports Serving Market on An Equal or Better Basis				
	Norfolk	Morehead City	Wilmington	Charleston	New Orleans
(1)	(2)	(3)	(4)	(5)	(6)
Kentucky					
Bowling Green			X		X
Danville	X	X	X		X
Franklin			X		X
Henderson					X
Hopkinsville					X
Horse Cave			X		X
Lexington	X	X	X		X
Louisville	X	X	X		X
Maysville	X	X	X		X
Murray					X
Owensboro					X
Paducah					X
Paris	X	X	X		X
Russellville					X
Shelbyville	X	X	X		X
Winchester	X	X	X		X
North Carolina					
Aberdeen			X		
Ahoskie	X				
Asheville	X				
Boone			X		
Burlington	X	X			
Carthage			X		
Chadbourin			X		
Charlotte				X	
Clinton		X			
Dunn			X		
Durham	X	X			
Ellerbe			X		
Fair Bluff			X		
Fairmont			X		
Farmville		X	X		
Fayetteville			X		
Franklinville	X	X			
Fuguay-Varina		X	X		
Goldsboro		X	X		
Greensboro	X	X			
Greenville		X	X		
Henderson	X	X			
Kernersville	X	X			
Kinston		X			

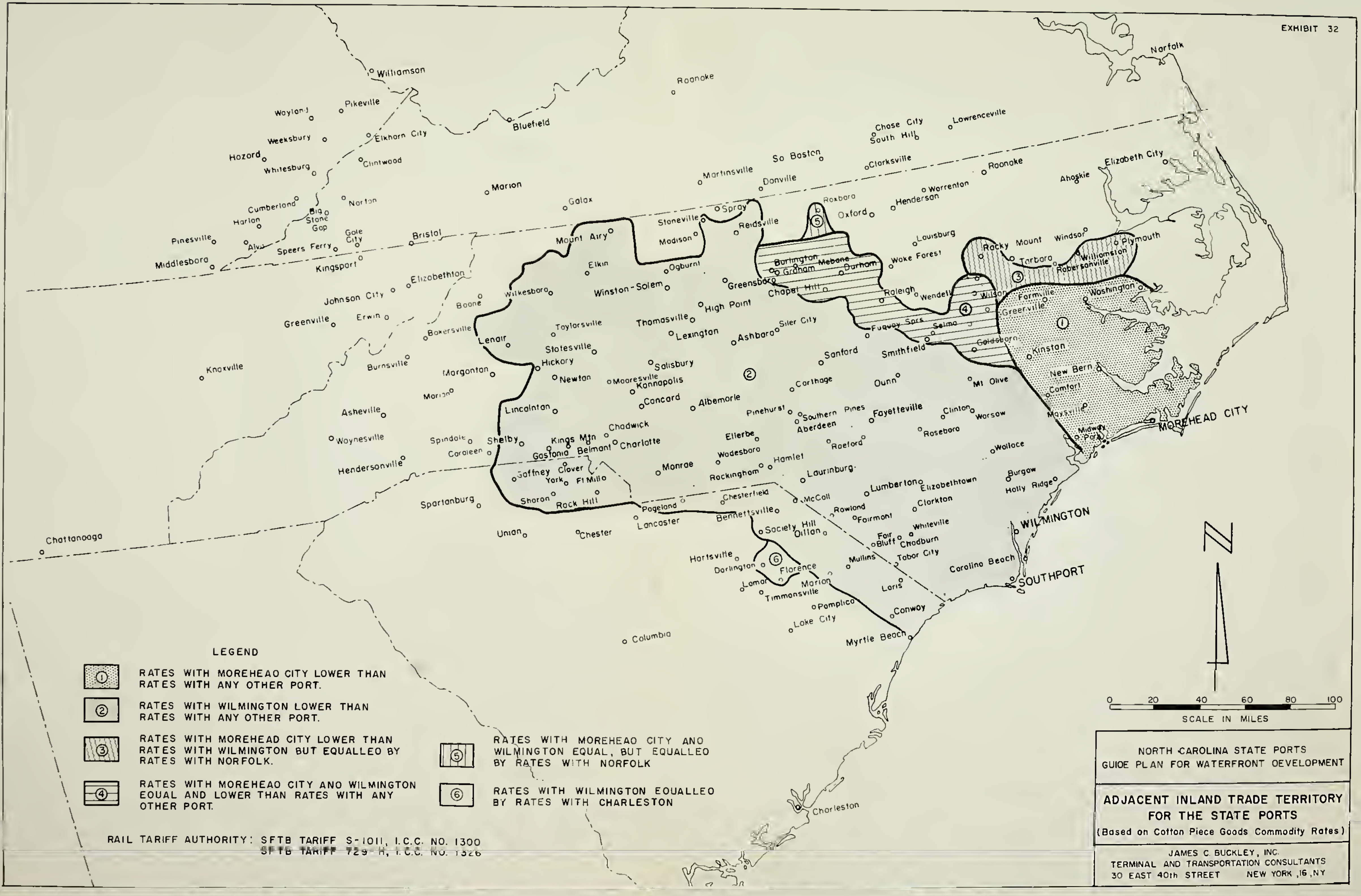
Exhibit 31
Page 3 of 4

Location of Tobacco Auction Market (1)	Ports Serving Market On An Equal or Better Basis: Norfolk (2)	Morehead City (3)	Wilmington (4)	Charleston (5)	New Orleans (6)
North Carolina, cont'd					
Louisburg	X				
Lumberton			X		
Madison	X				
Mebane	X	X			
Mount Airy	X				
New Bern		X			
New Leaksville	X				
Oxford	X	X			
Reidsville	X	X			
Robersonville	X	X			
Rocky Mount	X	X	X		
Roxboro	X				
Sanford			X		
Smithfield		X	X		
Tarboro		X			
Wallace			X		
Warrenton	X				
Washington		X			
Wendell	X	X			
West Jefferson	X				
Whiteville			X		
Williamston	X	X			
Wilson		X	X		
Windsor	X				
Winston-Salem	X	X	X		
Ohio					
Cincinnati	X	X	X		X
South Carolina					
Conway				X	
Darlington				X	
Dillon			X		
Hemingway				X	
Kingstree				X	
Lake City				X	
Loris				X	
Mullins			X		
Pamplico				X	
Timmonsville				X	

Exhibit 31
Page 4 of 4

Location of Tobacco Auction Market	Ports Serving Market on An Equal or Better Basis				
	Norfolk	Morehead City	Wilmington	Charleston	New Orleans
(1)	(2)	(3)	(4)	(5)	(6)
Tennessee					
Clarksville					X
Fayetteville					X
Gallatin			X		X
Greensville	X	X	X		X
Johnson City	X	X	X		X
Knoxville	X	X	X		X
Morristown	X	X	X		X
Mount Pleasant					X
Nashville			X		X
Rogersville	X	X	X		X
Sparta					X
Springfield					X
Sweetwater	X	X	X		X
Tazewell	X	X	X		X
Virginia					
Danville	X				

EXHIBIT 32



LEGEND

▨ ① RATES WITH MOREHEAD CITY LOWER THAN RATES WITH ANY OTHER PORT.

☐ ② RATES WITH WILMINGTON LOWER THAN RATES WITH ANY OTHER PORT.

▨ ③ RATES WITH MOREHEAD CITY LOWER THAN RATES WITH WILMINGTON BUT EQUALLED BY RATES WITH NORFOLK.

▤ ④ RATES WITH MOREHEAD CITY AND WILMINGTON EQUAL AND LOWER THAN RATES WITH ANY OTHER PORT.

▤ ⑤ RATES WITH MOREHEAD CITY AND WILMINGTON EQUAL, BUT EQUALLED BY RATES WITH NORFOLK

☐ ⑥ RATES WITH WILMINGTON EQUALLED BY RATES WITH CHARLESTON

RAIL TARIFF AUTHORITY: SFTB TARIFF S-1011, I.C.C. NO. 1300
~~SFTB TARIFF 729-H, I.C.C. NO. 1326~~

NORTH CAROLINA STATE PORTS
GUIDE PLAN FOR WATERFRONT DEVELOPMENT

ADJACENT INLAND TRADE TERRITORY FOR THE STATE PORTS

(Based on Cotton Piece Goods Commodity Rates)

JAMES C. BUCKLEY, INC.
TERMINAL AND TRANSPORTATION CONSULTANTS
30 EAST 40th STREET NEW YORK, 16, N.Y.

Exhibit 33
Page 1 of 4

Typical Rail Rates on Cotton Piece Goods From Selected North and South Carolina Points To Charleston, Morehead City, Norfolk, and Wilmington

(cents per 100 lbs.)

		Finished Cotton Piece Goods			Unfinished Cotton Piece Goods			
			Shipments Over 20,000 lbs.			Shipments over 24,000 lbs. But Less Than 60,000 lbs.		
From (1)	To (2)	Minimum (20,000 lbs.) (3)	First 20,000 lbs. (4)	Above 20,000 lbs. (5)	Minimum (24,000 lbs.) (6)	First 24,000 lbs. (7)	Above 24,000 lbs. (8)	Shipment of 60,000 lbs. and over (9)
North Carolina								
Asheboro	Charleston	64	64	51	53	53	46	46
	Morehead City	64	64	51	53	53	46	46
	Norfolk	68	68	55	57	57	49	49
	Wilmington	57	57	47	48	48	41	41
Asheville	Charleston	70	70	57	58	58	50	50
	Morehead City	83	83	67	70	70	59	59
	Norfolk	83	83	67	70	70	59	59
	Wilmington	74	74	59	63	63	54	54
Burlington	Charleston	70	70	57	59	59	50	50
	Morehead City	58	58	47	49	49	41	41
	Norfolk	59	59	49	51	51	42	42
	Wilmington	58	58	47	49	49	41	41
Charlotte	Charleston	61	61	50	51	51	43	43
	Morehead City	70	70	57	59	59	50	50
	Norfolk	74	74	59	63	63	54	54
	Wilmington	57	57	47	48	48	41	41
Greensboro	Charleston	67	67	55	57	57	49	49
	Morehead City	60	60	50	51	51	43	43
	Norfolk	63	63	51	52	52	44	44
	Wilmington	56	56	46	48	48	40	40

Exhibit 33
Page 2 of 4

		Finished Cotton Piece Goods			Unfinished Cotton Piece Goods			
			Shipments Over 20,000 lbs.			Shipments over 24,000 lbs. But Less Than 60,000 lbs.		
From (1)	To (2)	Minimum (20,000 lbs.) (3)	First 20,000 lbs. (4)	Above 20,000 lbs. (5)	Minimum (24,000 lbs.) (6)	First 24,000 lbs. (7)	Above 24,000 lbs. (8)	Shipment of 60,000 lbs. and over (9)
North Carolina (cont.)								
Goldsboro	Charleston	66	66	54	55	55	48	48
	Morehead City	42	42	34	35	35	31	31
	Norfolk	54	54	42	46	46	38	38
	Wilmington	42	42	34	35	35	31	31
Henderson	Charleston	70	70	57	58	58	50	50
	Morehead City	55	55	46	47	47	40	40
	Norfolk	50	50	41	42	42	37	37
	Wilmington	56	56	46	48	48	40	40
High Point	Charleston	66	66	53	55	55	47	47
	Morehead City	68	68	55	57	57	49	49
	Norfolk	66	66	53	55	55	47	47
	Wilmington	58	58	47	49	49	41	41
Kannapolis	Charleston	66	66	54	55	55	48	48
	Morehead City	68	68	55	57	57	49	49
	Norfolk	70	70	57	58	58	50	50
	Wilmington	61	61	50	51	51	43	43
Newton	Charleston	67	67	55	57	57	49	49
	Morehead City	72	72	58	61	61	52	52
	Norfolk	74	74	59	63	63	54	54
	Wilmington	64	64	51	54	54	46	46

Exhibit 33
Page 3 of 4

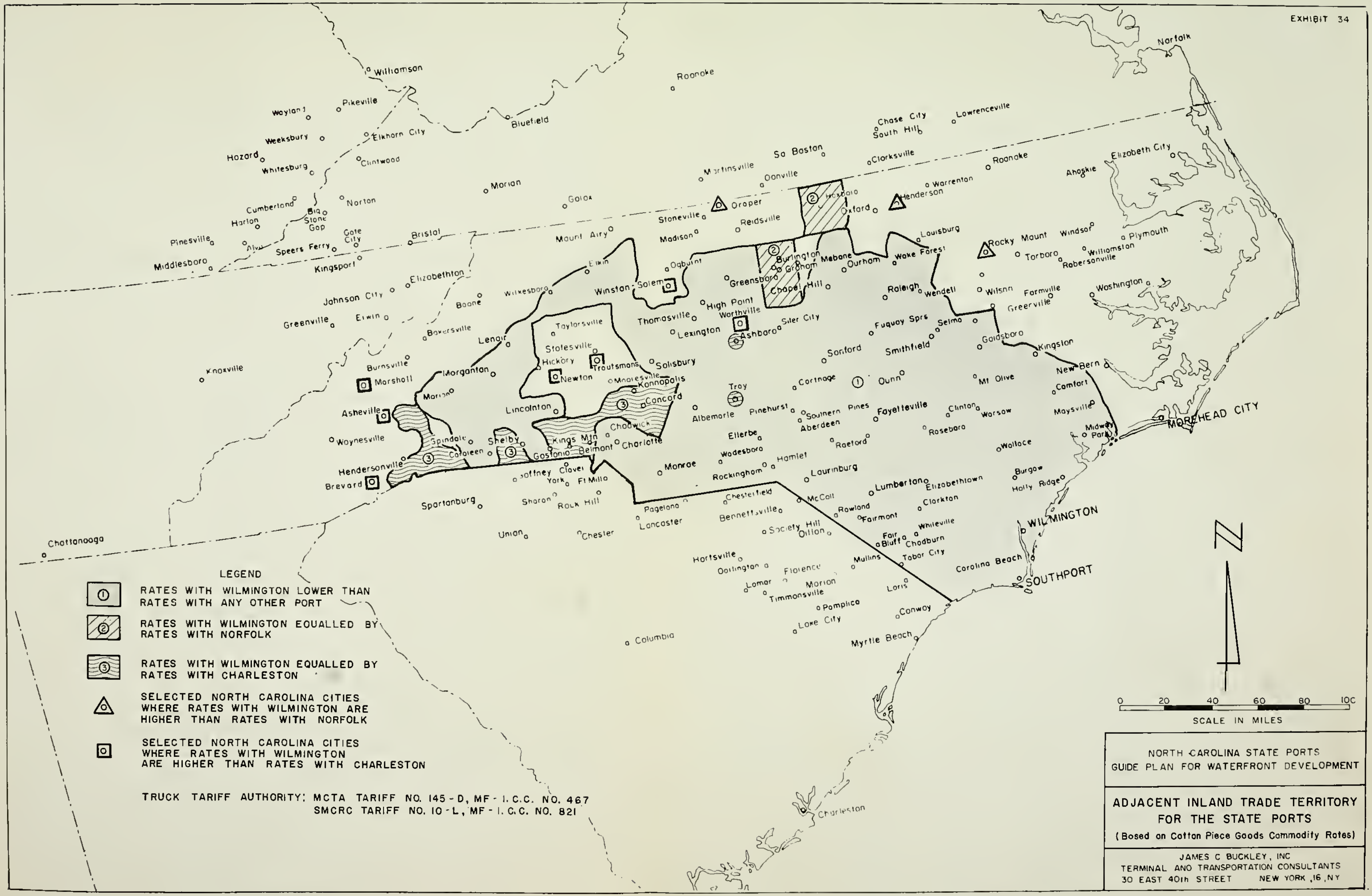
		Finished Cotton Piece Goods			Unfinished Cotton Piece Goods			
			Shipments Over 20,000 lbs.			Shipments over 24,000 lbs. But Less Than 60,000 lbs.		
From (1)	To (2)	Minimum (20,000 lbs.) (3)	First 20,000 lbs. (4)	Above 20,000 lbs. (5)	Minimum (24,000 lbs.) (6)	First 24,000 lbs. (7)	Above 24,000 lbs. (8)	Shipment of 60,000 lbs. and over (9)
North Carolina (cont.)								
Plymouth	Charleston	76	76	63	65	65	55	55
	Morehead City	43	43	36	37	37	32	32
	Norfolk	43	43	36	37	37	32	32
	Wilmington	53	53	43	45	45	38	38
Raleigh	Charleston	66	66	53	55	55	47	47
	Morehead City	50	50	40	42	42	36	36
	Norfolk	55	55	46	47	47	40	40
	Wilmington	50	50	40	42	42	36	36
Rocky Mount	Charleston	68	68	55	57	57	49	49
	Morehead City	48	48	38	40	40	34	34
	Norfolk	48	48	38	40	40	34	34
	Wilmington	49	49	40	41	41	35	35
Roxboro	Charleston	70	70	57	59	59	50	50
	Morehead City	57	57	47	48	48	41	41
	Norfolk	57	57	47	48	48	41	41
	Wilmington	57	57	47	48	48	41	41
Windsor	Charleston	76	76	63	65	65	55	55
	Morehead City	53	53	43	45	45	38	38
	Norfolk	41	41	34	35	35	30	30
	Wilmington	59	59	49	51	51	42	42

Exhibit 33
Page 4 of 4

		Finished Cotton Piece Goods			Unfinished Cotton Piece Goods			
			Shipments Over 20,000 lbs.			Shipments over 24,000 lbs. But Less Than 60,000 lbs.		
From (1)	To (2)	Minimum (20,000 lbs.) (3)	First 20,000 lbs. (4)	Above 20,000 lbs. (5)	Minimum (24,000 lbs.) (6)	First 24,000 lbs. (7)	Above 24,000 lbs. (8)	Shipment of 60,000 lbs. and over (9)
North Carolina (cont.)								
Wilson	Charleston	66	66	53	55	55	47	47
	Morehead City	47	47	37	39	39	33	33
	Norfolk	49	49	40	41	41	35	35
	Wilmington	47	47	37	39	39	33	33
South Carolina								
Darlington	Charleston	48	48	38	40	40	34	34
	Morehead City	64	64	51	53	53	46	46
	Norfolk	70	70	57	59	59	50	50
	Wilmington	48	48	38	40	40	34	34
Dillon	Charleston	50	50	40	42	42	36	36
	Morehead City	59	59	49	51	51	42	42
	Norfolk	66	66	53	55	55	47	47
	Wilmington	45	45	36	37	37	32	32

Tariff Authority: SFTB Tariff S-1011, I.C.C. No. 1300
SFTB Tariff 729-H, I.C.C. No. 1326

EXHIBIT 34



LEGEND

①	RATES WITH WILMINGTON LOWER THAN RATES WITH ANY OTHER PORT
▨ ②	RATES WITH WILMINGTON EQUALLED BY RATES WITH NORFOLK
▤ ③	RATES WITH WILMINGTON EQUALLED BY RATES WITH CHARLESTON
△	SELECTED NORTH CAROLINA CITIES WHERE RATES WITH WILMINGTON ARE HIGHER THAN RATES WITH NORFOLK
▣	SELECTED NORTH CAROLINA CITIES WHERE RATES WITH WILMINGTON ARE HIGHER THAN RATES WITH CHARLESTON

TRUCK TARIFF AUTHORITY: MCTA TARIFF NO. 145-D, MF-I.C.C. NO. 467
SMCRC TARIFF NO. 10-L, MF-I.C.C. NO. 821

NORTH CAROLINA STATE PORTS
GUIDE PLAN FOR WATERFRONT DEVELOPMENT

ADJACENT INLAND TRADE TERRITORY
FOR THE STATE PORTS
(Based on Cotton Piece Goods Commodity Rates)

JAMES C BUCKLEY, INC
TERMINAL AND TRANSPORTATION CONSULTANTS
30 EAST 40th STREET NEW YORK, 16, NY

Exhibit 35
Page 1 of 1

Typical Motor Carrier Commodity Rates on Cotton Piece Goods and Related Products

from

Selected North Carolina Points to Charleston, Morehead City, Norfolk and Wilmington

(cents per 100 lbs.)

North Carolina Points (1)	Charleston (2)	Morehead City 1/ (3)	Norfolk (4)	Wilmington (5)
Asheboro	40	-	45	40
Asheville	48	-	58	51
Burlington	40	-	39	39
Charlotte	40	-	50	38
Greenboro	40	-	41	37
Henderson	40	-	32	37
High Point	40	-	43	39
Kannapolis	40	-	46	40
Newton	40	-	50	42
Raleigh	40	-	37	32
Rocky Mount	42	-	30	31
Roxboro	40	-	38	38
Troutmans	38	-	48	41
Troy	38	-	47	38
Winston-Salem	38	-	43	39

1/ No commodity rates applicable.

Note: Rates apply on cotton factory products made wholly of cotton, various textile products, warp or yarn. Minimum weights of 20,000 lbs. to Norfolk and Charleston and 25,000 lbs. to Wilmington apply. Certain other types of textile products take a minimum weight of 30,000 lbs. to the three ports.

Tariff Authority: SMCRC Tariff No. 10L, MF-ICC No. 321
MCTA Tariff No. 145-D, MF-ICC No. 467

XI. The Capital Budget and Prospective Operating Results

The six-year Development Program discussed in Chapter VIII will require substantial investment and construction activity during the 1958-59 biennium, but there are some major elements in the program which should not be undertaken until the 1960-61 and 1962-63 biennia in order to avoid the possibility of making port improvements substantially in advance of need.

In the 1958-59 biennium, the first of the three biennia under consideration, funds should be made available for the following projects:

1. At Morehead City
    a. A warehouse of 100,000 square feet for the long-term storage of tobacco in order to put the port in a position to handle the prospective tobacco tonnage.
    b. Needed extensions of railroad track to the new tobacco warehouse.
    c. Access roads and other paving in connection with the new warehouse.
    d. Site preparation for the new warehouse, and needed extensions of utilities.
2. At Wilmington
    a. The extension of the existing bulk head and wharf approximately 1,226 feet southward, and thence 710 feet southeastward, to provide one new berth for general cargo and two new open berths primarily for the accommodation of the export trade in scrap metal.
    b. The construction of a new transit shed on the new general cargo pier which would be 500 feet long and 225 feet in depth. Initially, only about 37,500 square feet of this transit shed would be needed for general cargo, with the balance being reserved for temporary long-term storage of tobacco. As the use of this pier for general cargo increases, the portion of the transit shed reserved for the handling of transit cargo would be gradually increased, and the portion

reserved for storage would be gradually decreased, with the shed ultimately used entirely for general cargo, and able to handle 200,000 tons per year or more.

c. Rehabilitation of the fabricating shop in the old Maritime Commission Shipyard to permit its use for the long-term storage of tobacco in order to put the port in a position to handle the prospective tobacco tonnage.

d. Extension of rail track to the new ship berths, to the rear of the new transit shed, and to the rehabilitated fabricating shop in the old Maritime Commission Shipyard.

e. Extension of the crane rail to the three new berths.

f. Provision of road access to the new piers, to the new transit shed, and to the rehabilitated fabricating shop in the old Maritime Commission Shipyard, together with other needed pavement in connection with these installations.

g. Site preparation and needed extensions of utilities.

The above construction will put both Morehead City and Wilmington in a position further to develop their export trade in tobacco; will open up existing facilities and provide new facilities for the handling of the growing general cargo trade at Wilmington; and will provide badly needed open piers for the loading of scrap metal at Wilmington.

The new basic installations recommended as necessary in the 1958-59 biennium should be followed in the succeeding biennia with the construction of needed additional warehouse space for the long-term storage of tobacco at Wilmington. These installations might have to be advanced slightly if the tobacco trade grows more rapidly than anticipated, or deferred slightly if the growth of the tobacco trade should be less than anticipated. It should be emphasized that the construction recommended in the 1960-61 and 1962-63 biennia should be re-evaluated periodically in order that any needed changes can be made in scheduling the construction of this additional warehouse space.

Capital Budget

Preliminary cost estimates for the capital program discussed in Chapter VIII, and tabulated above, have been prepared on the basis of actual costs of construction of similar facilities at Wilmington during 1950-51, increased by a percentage corresponding to the percentage increase in the Engineering News Record indexes of building and construction costs at Atlanta, Georgia, between those years and November, 1956. These increases amounted to approximately 45% as between 1950 and 1956 costs, and to approximately 30% as between 1951 and 1956 costs. The capital budget based on these preliminary cost estimates, distributed by major construction categories and by biennia, is given in Exhibit 36 which appears on Page 169. From this exhibit, it will be noted that the capital budget required for the recommended six-year program may be summarized as follows:

	Estimated Capital Requirements		
Biennia	Total	Morehead City	Wilmington
1958-59	$ 7,330,043	$1,337,738	$ 5,992,305
1960-61	3,370,087	..	3,370,087
1962-63	3,101,780	..	3,101,780
Total	$13,801,910	$1,337,738	$12,464,172

Prospective Revenues

As a basis for evaluating the prospective results of operation following the installation of the recommended new facilities, a forecast has been made of prospective operating revenues at each port in the second year of each biennium here under consideration, - i.e. the years ending June 30, 1959, 1961 and 1963. A detailed breakdown of these forecasts for Morehead City is given in Exhibit 37 which appears on Page 170 and the Wilmington in Ex-

hibit 38 which appears on Page 171. These forecasted revenues together with actual revenues in the year ended June 30, 1956, may be summarized as follows:

Year Ending June 30	Operating Revenues		
	Total	Morehead City	Wilmington
1956-actual	$ 533,877	$ 163,948	$ 369,929
1959-est.	882,275	199,150	683,125
1961-est.	1,112,550	241,800	870,750
1963-est.	1,566,100	327,600	1,238,500

The above revenue estimates have been based on the assumption that the total deep-water tonnage prospectively available would not be realized until the year ending June 30, 1963; that 50% of the increase anticipated between the year ended June 30, 1956, and the year ending June 30, 1963, would be realized by the year ending June 30, 1961; and that 25% of the increase anticipated between the year ended June 30, 1956, and the year ending June 30, 1963, would be realized by the year ending June 30, 1959. The revenues which are not a function of tonnage handled or ships berthed have been developed through a careful review of existing and prospective tenant agreements.

Administrative Expenses

Head office or so-called administrative expenses have been estimated for the second year of each of the three biennia under consideration after a careful review of the existing administrative organizational structure and discussions with key members of the Authority's staff. Provision has been made for the additional solicitors recommended in Chapter X and for reasonable salary increases in the Authority's top management group. Experienced and capable executive talent in the field of port administration is not easily found today, and, as a consequence, the salaries offered for personnel of

this type are higher at a good many other port agencies than at the State Ports Authority. Since the Authority is acting in a proprietary as well as in a public capacity, it must compete for top executive personnel with private as well as with other public agencies. Some salary adjustments in this field would appear to be indicated and certainly in the best interest of the State's long-term program of port development and the promotion of water-borne commerce.

The estimated administrative expenses have not been broken down as between the two ports since this is an arbitrary matter at best, and has no meaning from the standpoint of policy determination. A detailed breakdown of these administrative expenses is given in Exhibit 39 which appears on Page 172. In summary, this exhibit shows the following estimates of administrative expense for the second year of each of the three biennia in the period under consideration, compared to the actual administrative expense in the year ended June 30, 1956:

Year Ending June 30	Administrative Expense
1956 - actual	$ 141,826
1959 - est.	193,025
1961 - est.	210,500
1963 - est.	243,200

It should be noted that the figures given above represent the total actual and estimated administrative expense for the Ports Authority, including both the portion of administrative expense which has been and may be paid with operating funds, and the portion which has been or may be paid with appropriated funds. The above data will not agree, therefore, with the published report of the Authority for the year ended June 30, 1956, which excludes from Administrative Expense the portion paid with appropriated funds.

Operation and Maintenance Expenses

Direct operation and maintenance expenses for each of the two port operations have been forecasted giving effect to past relationships and also to the prospective increases in tonnage handled and vessel movements. The detailed estimate for Morehead City is given in Exhibit 40 which appears on Page 173, and that for Wilmington is given in Exhibit 41 which appears on Page 174. The actual operation and maintenance expenses for each port in the year ended June 30, 1956, and the prospective operation and maintenance expenses at each port in the years ending June 30, 1959, 1961 and 1963 may be summarized from these exhibits as follows:

Year Ending June 30	Forecasted Operation and Maintenance Expenses		
	Total	Morehead City	Wilmington
1956 - actual	$ 297,162	$ 87,389	$ 209,773
1959 - est.	427,125	98,425	328,700
1961 - est.	522,600	107,650	414,950
1963 - est.	713,300	126,100	587,200

Here, again, the above figures for the year ended June 30, 1956 will not agree with the published reports of the Ports Authority because the figures given above are total operation and maintenance expenses, actual or forecasted, whether they have been or may be paid from operating funds or whether they have been or may be paid from appropriated funds. The published reports of the Ports Authority show only the operation and maintenance expenses paid from operating funds.

Effect has been given in the above forecasts to the increases anticipated in tonnage handled and vessel movements, and also to increases anticipated at Wilmington in the ground area under the jurisdiction of the Authority, and to

the increases anticipated at both Morehead City and Wilmington in the building space operated by the Authority.

Results of Operation

When the actual and estimated revenues, administrative expenses, and operation and maintenance expenses discussed above and shown in detail in Exhibits 37-41 inclusive, are combined and summarized, they show the following actual results of operation in the year ended June 30, 1956, and forecasted results of operation in the years ending June 30, 1959, 1961 and 1963:

Year Ending June 30	Revenues	Expenses Admin.	Expenses O & M	Operating Margin
1956 - actual	$ 533,877	$141,826	$297,162	$ 94,889
1959 - est.	882,275	193,025	427,125	262,125
1961 - est.	1,112,550	210,500	522,600	379,450
1963 - est.	1,566,100	243,200	713,300	609,600

The above actual and estimated operating margins are before depreciation or debt service. They are after total administrative and operation and maintenance expense, including both the portions of those expenses which were or may be paid from operating funds, and also the portions which were or may be paid from appropriated funds. Were the State to continue a policy of annual appropriations for administrative expenses and port commerce promotion and protection, the above operating margins would be augmented, from the standpoint of providing funds available for depreciation or debt service, by the amounts of such annual appropriations. For reference, the annual appropriations to the Authority during each of the past five fiscal years, and the amount of such appropriations actually expended, were as follows:

Year Ended June 30	State Funds Appropriated	State Funds Expended
1952	$ 75,582	$ 50,480.50
1953	111,449	97,689.10
1954	134,318	106,484.80
1955	135,718	114,686.33
1956	192,633	154,152.22

Unexpended appropriated funds revert to the State Treasury at the close of each fiscal year.

Financing the Development Program

Little opportunity is seen to finance the needed further development at Morehead City and Wilmington other than through general obligation bonds secured by the full faith and credit of the State of North Carolina. With a prospective margin available for debt service in the year ending June 30, 1963, of from $600,000 to $750,000 depending upon the availability of a State appropriation, a third or more of the funds required for this further development might conceivably be secured through the sale of bonds secured only by the revenues of the port facilities. Unfortunately, there are two elements in the Authority's present situation which militate against the use of revenue bonds as a financing medium. These are:

1. The requirement imposed by Section 13 of the State Ports Bond Act of 1949 that the net earnings of the operations conducted by the Authority be paid over annually to the State Treasurer to apply against the State's debt service obligation on bonds issued under that Act, except for an amount deemed necessary by the Authority for operating capital and amounts deemed proper and desirable by the Authority for making enlargements, extensions and other improvements in its facilities.

2. The burdensome provisions of the lease of the Wilmington port property from the Federal Government under which the Government reserves the right to recapture the facilities, but with restrictions on its obligation to pay rent or to pay a purchase price which give no assurance that purchasers of revenue bonds would be protected adequately against default.

Increasing attention is being given to the use of revenue financing for the development of port facilities. An effort should certainly be made to revise Section 13 of the State Ports Bond Act of 1949 and the lease between the Federal Government and the Authority so as to remove the existing obstacles to revenue financing, and thus to put the Authority in a position where it could take advantage of this type of financing when and if such action appears desirable. Further to strengthen the Authority's ability to finance with revenue bonds, action might well be taken to authorize the Authority to accumulate its operating balances in a reserve fund rather than to turn them over to the State Treasurer annually as now required by law.

Even though revenue financing, as such, does not appear feasible, it should be noted that by as early as the year ending June 30, 1963, a substantial portion of the average annual debt service on general obligation bonds which might be issued to finance the $13,300,000 program of further development will be covered by the Authority's operating margin. Average annual debt service on such an issue would certainly not exceed $1,000,000, whereas the forecasted operating margin for the Authority in the year ending June 30, 1963, as given above, will range from $600,000 to $750,000 depending upon the availability of a regular State Appropriation.

In this connection, it is well to note that the Authority's existing improvements have been financed with 20-year bonds whereas the average useful life of the facilities constructed with the proceeds from the sale of such bonds will be somewhere between 30 and 40 years. Consequently, the current relationship between funds available for debt service and debt service costs necessarily gives a distorted picture of the results of current operations. The bonds will be retired long before the facilities financed with their proceeds have completed their economic life. The State is, in effect, putting

money in the bank on which it should receive a very substantial return in later years when these port assets will continue to develop substantial revenues long after the bonds with which they were financed have been paid off and there is no longer an annual debt service requirement to be met.

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NORTH CAROLINA STATE PORTS AUTHORITY

Capital Budget for Recommended Six-Year Program

Items	Estimated Cost	Distribution by Biennia		
		1958-59	1960-61	1962-63
(1)	(2)	(3)	(4)	(5)
Morehead City				
Warehouse - 100,000 sq.ft.	1,150,000	1,150,000	..	..
Rail extension	21,505	21,505	..	..
Roads and other paving	44,620	44,620	..	..
Site preparation and utilities	121,613	121,613	..	..
Sub-Total	1,337,738	1,337,738	..	..
Wilmington				
Bulkhead & Wharf - 1,936 l. f.	3,473,000	3,473,000	..	..
Rail extension	161,920	113,850	20,240	27,830
Crane rail extension	43,700	43,700	..	..
Roads	124,200	124,200	..	..
Other paving	108,445	..	41,975	66,470
Transit shed	841,800	841,800	..	..
Warehouse space -Fab.Shop.Rehab.	851,000	851,000	..	..
" " -Fab.Shop Exten.	1,276,500	..	1,276,500	..
" " -New Building	4,450,500	..	1,725,000	2,725,500
Site preparation and utilities	1,133,107	544,755	306,372	281,980
Sub-Total	12,464,172	5,992,305	3,370,087	3,101,780
Grand Total	13,801,910	7,330,043	3,370,087	3,101,780

Note: The above estimates are based on actual costs of construction at Wilmington during 1950 and 1951 increased by a percentage corresponding to the percentage increase in the Engineering News Record Indexes of building and construction costs at Atlanta between those years and November, 1956. These increases amounted to approximately 45% as against 1950 costs, and to approximately 30% as against 1951 costs.

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NORTH CAROLINA STATE PORTS AUTHORITY

Actual and Prospective Revenues at Morehead City

Item	Actual-Years Ended June 30		Estimated-Years Ending June 30		
	1955	1956	1959	1961	1963
(1)	(2)	(3)	(4)	(5)	(6)
Wharfage	62,969	49,796	56,500	64,000	79,000
Storage	22,357	21,131	35,500	50,000	79,500
Equipment Rental	1,140	1,004	1,750	2,500	4,000
Other Rental	52,390	26,526	25,000	25,000	25,000
Handling Charges	9,157	15,119	23,750	32,500	50,000
Through-Put	21,240	27,007	31,500	36,000	45,000
Water	10,933	7,099	7,950	8,800	10,500
Dockage	4,176	5,907	8,050	10,200	14,500
Sale-Labor & Material	848	1,531	2,625	3,750	6,000
Handling Lines	1,173	2,003	2,275	2,550	3,100
Bagging	1,577	..	..	..	..
Fumigation	..	309	2,350	4,400	8,500
Interest Income	658	4,871	..	..	..
Port Magazine Income	958	436	625	750	1,000
Miscellaneous	1,351	1,209	1,275	1,350	1,500
Total	190,927	163,948	199,150	241,800	327,600

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NORTH CAROLINA STATE PORTS AUTHORITY

Actual and Prospective Revenues at Wilmington

Item	Actual-Years Ended June 30		Estimated-Years Ending June 30		
	1955	1956	1959	1961	1963
(1)	(2)	(3)	(4)	(5)	(6)
Wharfage	58,448	77,773	99,000	120,000	162,000
Storage	34,501	36,256	107,500	179,000	322,000
Equipment Rental	39,402	49,038	180,000	185,000	187,500
Other Rentals	7,117	6,577	7,750	8,500	10,000
Handling Charges	84,369	100,736	166,000	231,000	361,000
Water	5,127	4,859	8,250	12,000	19,500
Dockage	26,770	58,787	70,000	80,500	101,500
Sale-Labor & Material	7,531	3,900	6,750	9,500	15,000
Weighing	10,838	18,655	19,500	20,500	22,500
Handling Lines	2,041	3,630	5,500	7,000	10,000
Fumigation	1,440	7,427	11,500	16,000	25,000
Interest Income	544	1,405	..	..	..
Port Magazine Income	958	436	625	750	1,000
Miscellaneous	557	450	750	1,000	1,500
Total	279,643	369,929	683,125	870,750	1,238,500

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NORTH CAROLINA STATE PORTS AUTHORITY

Actual and Prospective Administrative Expenses

	Actual-Years Ended June 30		Estimated-Years Ending June 30		
Item (1)	1955 (2)	1956 (3)	1959 (4)	1961 (5)	1965 (6)
Salaries	74,163	86,024	121,000	123,000	125,000
Telephone & Telegraph	7,268	7,282	9,250	11,000	14,500
Travel	10,262	9,299	11,750	14,000	18,500
Retirement Expense	1,918	2,663	3,500	3,750	4,000
Payroll Tax	..	695	825	950	1,200
Medical Expense	501	1,269	1,600	1,900	2,500
Public Relations & Solicitation	2,763	5,441	7,500	10,000	15,000
Advertising & Dues	8,137	9,241	12,500	15,000	20,000
Automobile Expense	3,242	4,028	5,500	7,000	10,000
Postage	857	926	1,250	1,500	2,000
Rent-Field Offices	1,800	2,300	4,000	5,500	8,500
Printing & Supplies	3,829	4,049	5,000	6,000	8,000
Port Magazine	2,726	1,765	1,850	1,900	2,000
Interest Expense	..	1,072	..	..	..
General	2,283	5,772	7,500	9,000	12,000
Total	119,749	141,826	193,025	210,500	243,200

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NORTH CAROLINA STATE PORTS AUTHORITY

Actual and Prospective Operation and Maintenance Expense at Morehead City

	Actual-Years Ended June 30		Estimated-Years Ending June 30		
Item (1)	1955 (2)	1956 (3)	1959 (4)	1961 (5)	1963 (6)
Operating Items					
Salaries-Supervisory	18,362	20,704	22,000	23,000	25,000
" -Labor	7,317	12,432	17,500	22,000	31,000
" -Watchmen	3,682	4,147	5,300	6,300	8,300
Cost of Labor and Materials Sold	452	432	800	1,100	1,700
Operating Supplies	725	881	1,550	2,200	3,500
Gasoline & Oil	641	1,392	2,450	3,500	5,600
Insurance	1,824	1,696	1,900	2,100	2,500
Electricity	2,605	2,230	2,500	2,800	3,400
Water	979	611	675	750	900
Heat	409	444	500	500	500
Equipment Rental	559	..	..	..	..
Rent-Other	1,050	..	..	..	..
Miscellaneous	849	1,230	1,350	1,400	1,500
Maintenance Items					
Salaries-Labor	16,022	20,909	21,000	21,000	21,000
Supplies & Materials	9,742	17,497	18,000	18,000	18,000
Outside Repairs	2,703	2,592	2,700	2,800	3,000
General	..	192	200	200	200
Total	67,911	87,389	98,425	107,650	126,100

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NORTH CAROLINA STATE PORTS AUTHORITY

Actual and Prospective Operation and Maintenance Expenses at Wilmington

Item	Actual-Years Ended June 30		Estimated-Years Ending June 30		
	1955	1956	1959	1961	1963
(1)	(2)	(3)	(4)	(5)	(6)
Operating Items					
Salaries-Supervisory	26,979	27,357	30,800	34,200	41,000
" -Labor	69,039	95,980	147,000	198,000	300,000
" -Watchmen	10,076	10,939	13,750	16,500	22,000
Cost of Labor and Materials Sold	5,754	496	33,625	34,750	37,500
Operating Supplies	3,288	6,413	9,800	13,200	20,000
Gasoline & Oil	4,180	5,141	7,500	10,000	15,000
Insurance	3,513	3,237	4,750	6,500	10,000
Electricity	2,469	3,418	5,250	7,000	10,500
Water	855	1,271	2,300	3,200	5,000
Heat	867	1,257	1,375	1,450	1,600
Equipment Rental	529	..	..	..	..
Miscellaneous	2,784	1,564	1,600	2,350	3,100
Maintenance Items					
Salaries-Labor	24,808	23,505	33,000	42,000	60,000
Supplies & Materials	22,290	25,507	32,250	38,500	51,000
Outside Repairs	2,678	3,630	5,500	7,000	10,000
General	..	58	200	300	500
Total	180,109	209,773	328,700	414,950	587,200

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